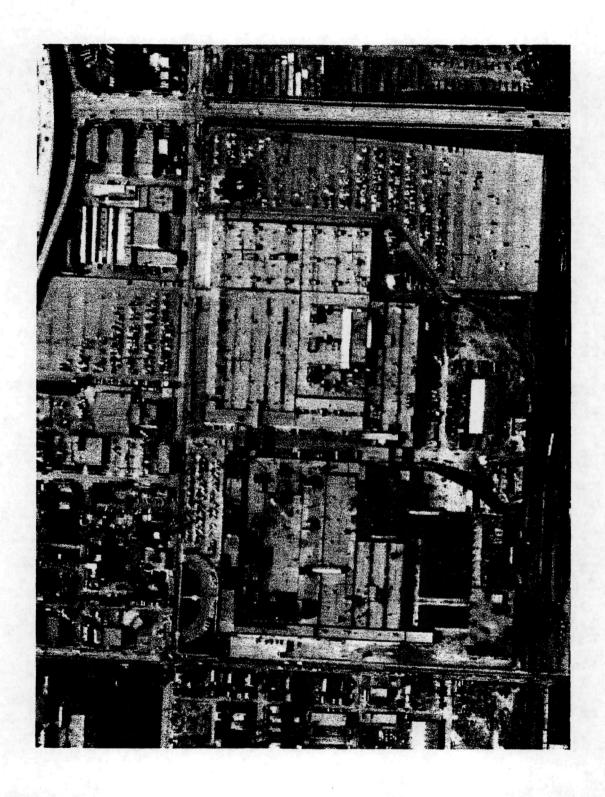


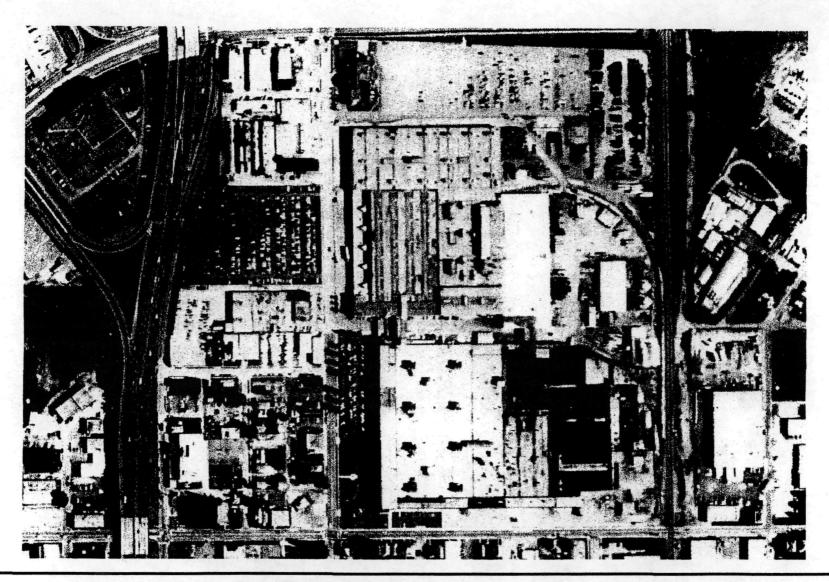
Aerial Photograph - 03-07-68

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS



Aerial Photograph - 04-13-73

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS



Aerial Photograph - 08-31-90

CHRYSLER CORPORATION
DAYTON THERMAL PRODUCTS



Aerial Photograph - 04-25-94

CHRYSLER CORPORATION DAYTON THERMAL PRODUCTS

ATTACHMENT B Soil Vapor Survey Sample Locations Chrysler Corporation Dayton Thermal Products Plant 1600 Webster Street Dayton, Ohio 45404

Sample Numbers

#1--10'-Blacktop

#220'-Blacktop
#310'-Blacktop
#4Depth 10'-Blacktop
#5Depth 30'-Possible misconnection of sample

tip. Groundwater encountered at 30'-Blacktop

#6--Depth 30'-Resampled at 30'

#7--Depth 10'-Blacktop

#8--Depth 10'-Soil

#9--Depth 20'-Soil

#10--Depth 10'-Blacktop

#11--Depth 20'-Soil

#12--Depth 10'-Soil

#13--Depth 20'-Soil

#14--Depth 10'-Soil

#15--Depth 20'-Soil

16--Depth 10'-Soil

#17--Depth 20'-Soil

#18--Depth 10'-Concrete

#19--Depth 20'-Concrete

Locations

LOCATION 1 -- Located in storage area near bldg.30-approx. 300' from Stanley Ave. fence & 6' from RR fence. LOCATION 1 -- Located in storage area near bldg.30-approx. 300' from Stanley Ave. fence & 108' off RR fence. LOCATION 2--Located in storage aea near bldg. 30-approx. 300' from Stanley Ave. fence & 6' from property fence of RR. LOCATION 3--Located in storage area near bldg. 30-approx. 9' from RR fence and 5' from Stanley Ave. fence. LOCATION 3--Located in storage area near bldg. bldg. 30-approx. 9' from RR fence and 5' from Stanley Ave. fence. LOCATION 3--Located in storage area near bldg. 30-approx. 9' from RR fence and 5' from Stanley Ave. fence. LOCATION 4--Located in tractor trailer storage area approx. 15' from fence on Stanley Ave. LOCATION 5--Located near clean storage piles near bldg. 47 on north side of RR tracks. LOCATION 5 -- Located near clean storage piles near bldg. 47 on north side of RR tracks. LOCATION 6--Location near 47 near clean storage piles on south side of RR tracks. LOCATION 6--Located near bldg. 47 near clean storage piles on south side of RR tracks. LOCATION 7--Located near bldg. 47 near clean storage piles on south side of bend in RR tracks. LOCATION 7--Located near bldg. 47 near clean storage piles on south side of bend in RR tracks. LOCATION 8--Located near bldg 47 near clean storage piles on south side of RR tracks approx. 90' from tanks. LOCATION 8--Located near bldg 47 near clean storage piles on south side of RR tracks approx. 90' from tanks. LOCATION 9--Located near bldg. 47 approx. 30' from clean storage piles. LOCATION 9 -- Located near bldg. 47 approx. 30' from clean storage piles. LOCATION 10 -- Located near end of RR siding near bldg. 50 on west side of driveway. LOCATION 10 -- Located near end of RR siding

near bldg. 50 on west side of driveway approx. 10' from north end & 60' from bldg. 50.

1

Sample Numbers

Locations

Sample I (ambers	23000010113
#20Depth 10'-Concrete	LOCATION 11Located near bldg. 50 on west side of driveway near boring location. Approx. 63' from edge of bldg. 50 & 135' from north end.
#21-Depth 20'- Concrete	LOCATION 11Located near bldg. 50 on west side of driveway near boring location. Approx. 63' from edge of bldg. 50 & 135' from north end.
#22Depth 10'-Concrete	LOCATION 12Located near bldg. 50 on west side of driveway. Approx 280' from north end of bldg. and 63' from edge of bldg.
#23Depth 20'-Concrete	LOCATION 12Located near bldg. 50 on west side of driveway. Approx 280' from north end of bldg, and 63' from edge of bldg.
#24Depth 10'-Concrete	LOCATION 13Located off bldg. 50 approx. 36' off south end of bldg. 50 & 9' off east side bldg.
#25Depth 20'-Concrete	LOCATION 13Located off bldg. 50 approx. 36' off south end of bldg. 50 & 9' off east side bldg.
#26Depth 10'-Concrete	LOCATION 14Located near bldg. 47, approx. 10' off annex corner & 5' off bldg.
#27Depth 20'-Concrete	LOCATION 14Located near bldg. 47, approx. 10' off annex corner & 5' off bldg.
#28Depth 10'-Concrete	<u>LOCATION 15</u> —Located off bldg. 47 behind annex bldg. Approx. 10' from rear of bldg. 49 & 25' from south side of no. 47.
#29Depth 20'-Concrete	LOCATION 15Located off bldg. 47 behind annex bldg. Approx. 10' from rear of bldg. 49 & 25' from south side of no. 47.
#3(Depth 10'-Concrete	LOCATION 16Located near former trichlor tanks on south side of bldg. 50 and north side of driveway.
#31Depth 20'-Concrete	LOCATION 16Located near former trichlor tanks on south side of bldg. 50 and north side of driveway.
#32:Depth 10'-Concrete	LOCATION 17Located on south side of bldg. 53 & on west side of trichlor tanks on north side of drive.
#35Depth 20'-Concrete	LOCATION 17Located on south side of bldg. 53 & on west side of trichlor tanks on north side of drive.
#34Depth 10'-Concrete	LOCATION 18Located on south side of bldg. 52 under conveyor bridge on north side of drive.
#35Depth 20'-Concrete	LOCATION 18Located on south side of bldg. 52 under conveyor bridge on north side of drive.
#36Depth 10' Concrete	LOCATION 19Located on south side of drive near tanks halfway between samples 11 & 12.
#37Depth 20'-Concrete	LOCATION 19Located on south side of drive near tanks halfway between samples 11 & 12.
#33Depth 10'-ConcreteDay 3	LOCATION 20
#39Depth 20'-Concrete	LOCATION 20

Sample Numbers

Locations

Satupie I (ambers	Locations
#40Depth 10'-Concrete	LOCATION 21Located near the trichlor, tanks near former location #16.
#41Depth 20'-Blacktop	LOCATION 21Located near the trichlor, tanks near former location #16.
#42-Depth 10'-Blacktop	LOCATION 22Located on south side of bldg. 40 on Leo Street. Located near entrance gate.
#43-Depth 20'-Blacktop	LOCATION 22Located on south side of bldg. 40 on Leo Street. Located near entrance gate.
#44-Depth 10'-Concrete	LOCATION 23Located off Leo & Milburn Street.
#45-Depth 20'-Concrete	LOCATION 23Located off Leo & Milburn Street.
#46-Depth 10'-Concrete	LOCATION 24Located in the corner of the
•	property near bldg, 3A
#47-Depth 20'-Concrete	LOCATION 24Located in the corner of the
·	property near bldg. 3A This sample was difficult to
	extract, possible tight clays in range of 18-20 ft.
#48-Depth 10'-Concrete	LOCATION 25Located on north side of boiler
-	house and waste storage area.
#49-Depth 20'-Concrete	LOCATION 25Located on north side of boiler
	house and hazardous waste storage area.
#50-Depth 10'-Concrete	LOCATION 26Located near hazardous waste
	storage area near bldg. 39.
#51-Depth 20'-Concrete	LOCATION 26Located near hazardous waste
	storage area near bldg. 39.
#52-Depth 10'-Concrete	LOCATION 27Located near bldg.'s 47 & 49
	near waste storage area.
#53-Depth 20'-Concrete	LOCATION 27Located near bldg.'s 47 & 49
	near waste storage area.
#54-Depth 10'-Concrete	LOCATION 28Located near bldg's 59 & 3A
	near property fence & RR tracks.
#5:5-Depth 20'-Concrete	LOCATION 28Located near bldg's 59 & 3A
	near property fence & RR tracks.
#56-Depth 10'-Concrete	LOCATION 29Located near bldg's 59 & 39
1.55	near property fence.
#57-Depth 20'-Concrete	LOCATION 29Located near bldg's 59 & 39
	near property fence.
#58-Depth 7'-Soil Biopile	LOCATION 30Located approx. 10' from toe
ASO De A SI Cell Diselle	power pole in the treament cell
#59-Depth 7'-Soil Biopile	LOCATION 31Located in angled end of biopile
#CO Data Ti Sail Dianila	near RR
#60-Depth 7'-Soil Biopile	LOCATION 32Located on biopile near plastic
#C1 Doub 101 Disables	storage units.
#61-Depth 10'-Blacktop	LOCATION 33Located at NE corner of property
#4.2 Death 20! Pleakton	by location 3 water thru out. LOCATION 33Located at NE corner of property
#62-Depth 20'-Blacktop	
#62 Donath 10! Blooksom	by location 3 water thru out. LOCATION 34Located near WWTP water at 20'
#63-Depth 10'-Blacktop	LOCATION 34Located hear www.r water at 20

Sample Numbers

_	
#64-Depth 16'-Blacktop	LOCATION 34Located near WWTP water at 20'
#65-Depth 10'-Blacktop/Concrete	LOCATION 35Located in front of bldg 52, truck bay 7.
#66-Depth 20'-Blacktop/Concrete	LOCATION 35Located in front of bldg 52, truck bay 7.
#6''-Depth 10'-Blacktop/Concrete	LOCATION 36Located in front of bldg. 40, near helipad.
#68-Depth 20'-Blacktop/Concrete	LOCATION 36Located in front of bldg. 40, near helipad.
#69-Depth 10'-Concrete	LOCATION 37Located in bldg. 40B in rear coil dept.
#70-Depth 20'-Concrete	LOCATION 37Located in bldg. 40B in rear coil dept.
#71-Depth 10'-Concrete	LOCATION 38Located in bldg. 40 near column 16
#72-Depth 20'-Concrete	LOCATION 38Located in bldg. 40 near column 16
#73-Depth 10'-Concrete	LOCATION 39Located in bldg. 40A in front of
	trichlor tank
#74-Depth 20'-Concrete	LOCATION 39Located in bldg. 40A in front of
	trichlor tank
#75-Depth 10'-Concrete	LOCATION 40Located in bldg 53 near dept. 9214
#76-Depth 20'-Concrete	LOCATION 40Located in bldg 53 near dept. 9214
#77-Depth 10'-Concrete	LOCATION 41Located in bldg 3A near repair
	shop garage door.
#78-Depth 20'-Concrete	LOCATION 41Located in bldg 3A near repair
	shop garage door.
#79-Depth 10'-Asphalt	LOCATION 42Located in parking lost near guard
	shack & bldg. 40.
#80-Depth 20'-Asphalt-(difficult drilling 17'- 19')	LOCATION 42Located in parking lost near guard
	shack & bldg. 40.
#81-Depth 10'-Concrete	LOCATION 43Located on north side of bldg. 47
	near hazardous waste storage area.
#82-Depth 20'-Concrete	LOCATION 43Located on north side of bldg. 47
	near hazardous waste storage area.
#83-Depth 10'-Concrete	LOCATION 44In the fenced in area of gate 44.
#84-Depth 20'-Concrete	LOCATION 44In the fenced in area of gate 44.
#85-Depth 10'-Concrete	LOCATION 45Near rack storage area of former
	bldg. 8.
#86-Depth 20'-Concrete	LOCATION 45Near rack storage area of former
	bldg. 8.
#87-Depth 10'-Concrete	LOCATION 46On the south side of bldg. 50 near
	sample 13.
#83-Depth 20'-Concrete	LOCATION 46On the south side of bldg. 50 near
	sample 13.
#89-Depth 10'-Concrete	LOCATION 47Located opposite of degreaser sludge
	storage tank.
#93-Depth 20'-Concrete	LOCATION 47Located opposite of degreaser sludge
_	storage tank.
#91-Depth 10'-Concrete	LOCATION 48Located across from plastic silo
	storage.
#91-Depth 20'-Concrete	Concrete encountered at 18' no sample
Total 86 Samples at 44 Locations	
Company D. J. 40 Company of 25 Lagrations	

Contour Data 49 Samples at 25 Locations

ATTACHMENT E
Soil Boring Logs
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Project	Chrysler Dayton Thermal	Products	Boring Number	SB-1			
Location	Dayton, Ohio		Date Started	10/17	/94		
Client	Chrysler Corporation		Date Completed	10/17	/94		
Driller	Moody's of Dayton		Drilling Method	4.25"	HSA,	CME 7	5
Elevation	751.55 MSL		Page Number	1	of	1	
Water Lev	el & Date ~26 ft BGS	10/17/94	Logged By		Thomp	son	

Depth		Sample)	SPT	Description: Name & USCS Group	Remarks
BGS (Et)	Int- erval	Type		Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, Wtr Depth
(ano.	(10)	(14)	Relative Density of Consistency	bye lest, will bepth
				;		
5	4-6	s1	1.4	25-35 40-40 (75)	Poorly Graded Gravel with Clay and Sand (GP-GC); Moderate Red (5R5/4) to Light Brown (5YR6/4); Dry; Very Dense	BG, BG, 1.0 ppm Dye Test - Neg.
_ 10	9-11	S2	1.7	18-27 32-37 (59)	Poorly Graded Gravel with Sand and Some Silt (GP); Very Light Gray (N8) to Light Gray (N7); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
_ 15	14-16	S 3	1.4	19-34 50-28 (84)	Same as S2; Gravel is Well Rounded	BG, 3.2, 0.4 ppm Dye Test - Neg.
_ 20	19-21	S4	1.5	12-18 20-20 (38)	Same as S2; Slightly Moist	BG, 7.0 ppm, BG Dye Test - Neg.
25	24-26	S 5	1.3	10-12 12-18 (24)	Poorly Graded Sand with Gravel (SP); Moderate Brown (5YR3/4); Wet; Medium Dense	BG, BG, BG Dye Test - Neg. Water Table ~26 ft BGS
_ 30	29-31	S6	1.5	14-18 18-20 (36)	Poorly Graded Sand and Gravel (SP); Pale Brown (5YR5/2); Wet; Dense	BG, BG, BG Dye Test - Neg.
- 						Backfilled with Grout 0-31 ft

CLEAN TECH

chrysb1.log

Project Chrysler	Dayton Thermal	Products	Boring Number	SB-2			
Location Dayton,	Ohio		Date Started	10/18	/94		
Client Chrysler	Corporation		Date Completed	10/18	/94	·	
Driller Moody's	of Dayton		Drilling Method	4.25"	HSA,	CME 7	5
Elevation 752.20	MSL		Page Number	1	of	1	
Water Level & Date	~28 ft BGS	10/18/94	Logged By		Thomps	on	_

Depth		Sample Type		SPT	Description: Name & USCS Group Symbol, Color, Moisture Content,	Remarks Air Monitor Data,
BGS (ft)	Int- erval			(N)	Relative Density or Consistency	Dye Test, Wtr Depth
5	4-6	S1	1.7	15-25 27-30 (52)	Poorly Graded Gravel with Sand (GP); Light Brownish Gray (5YR6/1); Dry; Very Dense	
_ 10	9-11	S2	1.3	15-14 13-16 (27)	<pre>Poorly Graded Sand with Gravel Light Brownish Gray (5YR6/1); Slightly Moist; Medium Dense</pre>	BG, BG, BG Dye Test - Neg.
15	14-16	 53 	1.3	20-20 20-18 (40)	Poorly Graded Sand and Gravel (SP) with a 2" Clay Pan Layer at 14.5' (5YR6/1), Clay was (10YR6/6); Dense; Moist	_ BG, 1.0 ppm, BG Dye Test - Neg.
_ 20	19-21	S4	1.4	18-17 13-12 (30)	Poorly Graded Gravel with Sand and Clay (GP-GM); Pale Brown (5YR5/2); Medium Dense; Wet	_ BG, 2.5 ppm, BG Dye Test - Neg.
_ 25	24-26	S5	1.9	15-20 32-33 (52)	Sandy, Silty, Clay with Gravel (CL-ML); Pale Yellowish Brown to Pale Brown (10YR6/2) to (5YR5/2); Wet; Very Dense	BG, BG, BG Dye Test - Neg. Water Table
_ 30	29-31	S6	2.0	20-30 27-38 (57)	Poorly Graded Sand with Silt (SW-SM) Pale Brown (5YR6/2); Wet; Very Dense	~28 ft BGS BG, BG, BG Dye Test - Neg.
						_ Backfilled with Grout 0-31 ft
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CLEAN TECH chrysb2.log

N = Number Blows to Drive 2 "Spoon 24" with 140 lb. Weight Falling 30 "Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

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Project.	_Chrysler D	ayton Thermal	Products	Boring Number	SB~3
Location	Dayton, Oh	io		Date Started	10/19/94
Client	Chrysler C	orporation		Date Completed	10/19/94
	Moody's of			Drilling Method	4.25" HSA, CME 75
Elevation	750.14 ft	MSL		Page Number	1 of 1
Water Lev	el. & Date	~25 ft BGS	10/19/94	Logged By	Thompson

Depth		Sample		SPT	Description: Name & USCS Group		Remarks
BGS (ft)	Int-	Type &No.		Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency		Monitor Data Test, Wtr Dep
_ 5	4 – 6	S1	0.9	12-6 8-10 (14)	Silty Sand with Gravel (SM); Light Gray (N7); Dry; Medium Dense		G, BG, BG ve Test - Neg.
_ 10	9-11	S2	1.6	20-14 9-11 (23)	Top .5 ft same as S1; Bottom 1.1 ft Silty Gravel (GM); Light Gray (N6); Dry; Medium Dense		G, BG, BG ve Test - Neg.
_ 15	14-16	S 3	1.5	22-25 20-15 (45)	Poorly Graded Sand with Silt (SP-SM) Very Light Gray (N8); Dry; Very Dense	– Bo	G, BG, 10.0 pp ve Test - Neg.
_ 20	19-21	S4	1.6	19-25 20-23 (45)	Same as S3		G, 0.5, 2.0 pp ve Test - Neg.
_ 25	24-26	S 5	1.8	20-25 23-27 (48)	Poorly Graded Sand with Silt and Gravel (SP-SM); Medium Dark Gray (N4); Wet; Dense	Ma Vd V	G, BG, 3.0 ppm ve Test - Neg. iter Table
_ 30	29-31	S6	2.0	25-27 35-34 (62)	Top 1 ft Poorly Graded Sand (SP); Bottom 1 ft Poorly Graded Sand with Silt (SP-SM); Medium Dark Gray (N4); Wet; Very Dense	_ BG	95 BGS 5, BG, 1.5 ppm ve Test - Neg.
							ackfilled with cout 0-31 ft
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CLEAN TECH chrysb3.log

Project	Chrysler Dayton Thermal Products	Boring Number	SB-4
Location	Dayton, Ohio	Date Started	10/29/94
Client	Chrysler Corporation	Date Completed	10/31/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	749.87 MSL	Page Number	1 of 1
Water Lev	ei. & Date ~25 ft BGS 10/31/94	Logged By	Thompson

Depth		Sample		SPT	Description: Name & USCS Group	Remarks Air Monitor Data
BGS (ft)	Int-		(ft)	(N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Dye Test, Wtr Depth
(+-)	erval	ano.	(10)	(N)	Relative bensity of consistency	Dye rest, wir bepin
_ 5	4-6	S1	1.2	12-13 17-20 (30)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	_ BG, BG, 0.5 ppm Dye Test - Neg.
_ 10	9-1.1	S2	1.5	14-22 21-18 (43)	Same as S1	_ BG, BG, 1.0 ppm Dye Test - Neg.
15 - 15	14-16	S 3	1.0	5-5 5-9 (10)	Well Graded Gravel with Clay (GW-GC) Brownish Gray (5YR4/1); Wet; Loose	_ BG, BG, 2.0 ppm Dye Test - Neg.
_ 20	19-21	S4	1.2	7-7 8-11 (15)	Same as S3 with a small band of orange staining ~6" from the bottom of the spoon	BG, BG, 1.0 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.6	16-25 35-43 (60)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 2.0 ppm Dye Test - Neg. Water Table ~25 ft BGS
_ 30	29-31	S 6		22-18 15-16 (33)	Well Graded Gravel with Sand and Clay (GW-GC); Brownish Gray (5YR 4/1); Wet; Dense	_ BG, BG, 2.0 ppm Dye Test - Neg.
						_ Backfilled with Grout 0-31 ft
				<u> </u>		

CLEAN TECH

chrysb4.log

Project.	Chrysler Dayton Thermal Products	Boring Number	SB-5
Location	Dayton, Ohio	Date Started	10/19/94
Client	Chrysler Corporation	Date Completed	10/19/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.20 MSL	Page Number	1 of 1
Water Lev	el & Date ~26 ft BGS 10/19/94	Logged By	Thompson

Depth	·	ample	·	SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Type	Rec.	Result	Symbol, Color, Moisture Content,	Air Monitor Data
(::ˈt)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test,Wtr Depth
- 5	4-6	S1	1.5	20-25 30-38 (55)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, 0.4 ppm, BG Dye Test - Neg.
10	9-11	S2	1.6		<pre>Poorly Graded Sand with Gravel Moderate Brown (5YR4/4); Moist; Medium Dense</pre>	BG, BG, 2.0 ppm Dye Test - Neg.
_ 15	14-16	S3	1.7	15-15 20-20 (35)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (5YR6/1); Moist; Dense	BG, BG, 9.0 ppm Dye Test - Neg.
20	19-21	S4	1.8	45-70 33-33 (103)	Same as S3; Very Dense	BG, BG, 10.0 ppm Dye Test - Neg.
_ 25	24-25	S 5	1.9	55-27	Well Graded Gravel with Sand (GW); Moderate Brown (5YR4/4); Wet; Very Dense	_ BG, 1.5, 8.0 ppm Dye Test - Neg.
_ 30	29 -31	S6	1.2	35-50 45-35 (95)	Same as S5	BG, 5.0,10.0 ppm Dye Test - Pos. Water Table -25 ft BGS
						Backfilled with Grout 0-31 ft
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CLEAN TECH

chrysb5.log

Project	Chrysler Da	ayton Thermal	Boring Number	SB-6		
Location	Dayton, Oh.	io		Date Started	10/20/94	
Client	Chrysler C	orporation		Date Completed	10/20/94	
Driller	Moody's of	Dayton		Drilling Method	4.25" HSA,	CME 75
Elevation	752.01 MSL			Page Number	1 of	1
Water Lev	el & Date	~25 ft BGS	10/20/94	Logged By	Thompson	

waser r				23 IL BO	10/20/94 Logged By	Thompson
Depth 3GS (ft)	Int- erval			SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
- ⁵	4-6	S1	1.2	15-26 32-30 (58)	Well Graded Sand with Silt, Clay and Gravel (SW-SC); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
_ 10	911	S2	1.4	18-18 20-28 (38)	Same as S1; Dense	BG, BG, 2.0 ppm Dye Test - Neg.
15	1416	s3	0.8	13-8 7-9 (15)	Well Graded Gravel with Sand and Silt (GW-GM); Grayish Brown (5YR 5/2); Dry; Medium Dense	BG, BG, 4.0 ppm Dye Test - Neg.
_ 20	1921	S4	1.8	18-22 18-17 (40)	Same as S3; Dense	BG, 0.5, 2.5 ppm Dye Test - Neg.
25	2426	S5	1.7	20-18 18-20 (36)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Dense; Orange Staining	BG, 3.0, 1.5 ppm Dye Test - Neg. Water Table
_ 30	29-31	s6	1.8	26-24 24-28 (48)	Well Graded Gravel with Sand, Silt, and Some Clay (GW-GM); Brownish Gray (5YR4/1); Wet; Dense	~25 ft BGS BG, BG, BG Dye Test - Neg.
						Backfilled with Grout 0-31 ft
				ļ		, s

CLEAN TECH chrysb6.log

Project	Chrysler Dayton Thermal Products	Boring Number	SB-7
Location	Dayton, Ohio	Date Started	10/20/94
Client	Chrysler Corporation	Date Completed	10/20/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.41 MSL	Page Number	1 of 1
Water Lev	el & Date ~25 ft BGS 10/20/94	Logged By	Thompson

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
1	Int- erval			Result (N)	Symbol, Color, Moisture Content Relative Density or Consistency	Air Monitor Data Dye Test,Wtr Depth
_ 5	4-6	Sl	1.4		Well Graded Sand with Silt and Gravel (SW-SM); Light Gray (N7) to Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
_ 10	9-11	S2	1.5	9-12 14-14 (26)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Moist; Medium Dense	BG, BG, 1.5 ppm Dye Test - Neg.
_ 15	14-16	S3	1.9	10-15 17-25 (32)	Well Graded Sand with Silt and Gravel (SW-SM); Light Brownish Gray (N7); Moist; Dense	BG, 3.0,10.0 ppm Dye Test - Neg.
_ 20	19-21	S4	1.5	30-33 27-25 (60)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Moist; Very Dense	BG, 4.0, 2.0 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.8	25-22 20-25 (42)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Wet; Dense	BG, BG, 4.5 ppm Dye Test - Neg. Water Table
_ 30	29-31	s 6	1.8	30-27 25-25 (52)	Poorly Graded Sand with Silt and Gravel (SP-SM); Brownish Gray (5YR 4/1); Wet; Very Dense	-25 ft BGS BG, 3.0, 3.0 ppm Dye Test - Neg.
_						Backfilled with Grout 0-31 ft
		,				

CLEAN TECH chrysb7.log

Froject	Chrysler Dayton Thermal	Boring Number	SB-8		
Location	Dayton, Ohio		Date Started	10/19/94	
Client	Chrysler Corporation		Date Completed	10/19/94	
Drillex	Moody's of Dayton		Drilling Method	4.25" HSA, CM	E 75
Elevation	751.34 MSL		Page Number	1 of	1
Water Lev	el & Date ~25 ft BGS	10/19/94	Logged By	Thompson	

c===		ı Date		-23 IL I	10/19/94 Logged By	111011105011
Depth BGS (ft)	Int- erval		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
_ 5	4-€	S1	1.0	12-32 34-33 (66)	Well Graded Sand with Silt (SW-SM); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 1.0 ppm Dye Test - Neg.
_ 10	9-11	S2	1.3	12-17 18-20 (35)	Well Graded Sand with Gravel (SM); Brownish Gray (5YR4/1); Moist; Dense	BG, BG, 4.0 ppm Dye Test - Neg.
_ 15	14-16	S3	1.3	20-25 25-23 (50)	Same as S2; Very Dense	BG, 0.5,1.0 ppm Dye Test - Neg.
_ 20	19-21	S4	2.0	20-22 25-40 (47)	Clay with Gravel (CH); Brownish Gray (5YR4/1) to Light Brown (5YR5/6) Moist; Dense	_ BG, BG, BG Dye Test - Neg.
25 25	24-26	\$ 5	1.5	12-18 19-25 (37)	Poorly Graded Sand with Gravel (SP); Moderate Brown (5YR4/4); Wet; Dense	BG, 0.5,8.0 ppm Dye Test - Neg. Water Table
30	29-31	S6	2.0	16-19 19-20 (38)	Top foot Poorly Graded Sand (SP); Bottom foot Well Graded Sand (SW); Brownish Gray (5YR3/2); Wet; Dense	~25 ft BGS _ BG, 9.0,1.0 ppm Dye Test - Neg.
						_ Backfilled with Grout 0-31 ft

CLEAN TECH chrysb8.log

Project	Chrysler Dayton Thermal B	Products	Boring Number	SB-9		
Location	Dayton, Ohio		Date Started	10/21/94		
Client	Chrysler Corporation		Date Completed	10/21/94		
Driller	Moody's of Dayton		Drilling Method	4.25" HSA,	CME 75	
Elevation	750.59 MSL		Page Number	1 of	1	
Water Lev	el. & Date ~26 ft BGS	10/21/94	Logged By	Thompson		

Depth BGS		Sample Type		SPT	Description: Name & USCS Group Symbol, Color, Moisture Content	Remarks Air Monitor Data
(ft)	Int- erval			(N)	Relative Density or Consistency	Dye Test, Wtr Dept
_ 5	4-6	s1	1.0	2-4 6-7 (10)	Clay with Gravel (CH); Brownish Gray (5YR4/1); Moist; Loose	_ BG, BG, BG Dye Test - Neg.
_ 10	9-11	S2	0.7	6-5 5-5 (10)	Well Graded Gravel with Sand (GP); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
_ 15	14-16	s 3	1.3	7-9 11-16 (20)	Same as S2; Wet	BG, BG, 1.0 ppm Dye Test - Neg.
_ 20	19-21	S4	2.0	20-35 28-30 (63)	Poorly Graded Sand with Gravel (SP); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, 1.0,15.0 pp Dye Test - Pos.
_ 25	24-26	S5 	1.6	23-30 30-35 (60)	Poorly Graded Sand with Gravel (SP); Medium Dark Gray (N4); Wet; Very Dense	BG, BG, 8.0 ppm Dye Test - Neg. Water Table
_ 30	29-31	S6			No Sample Collected	~26 ft BGS
: - 						Backfilled with Grout 0-31 ft

CLEAN TECH chrysb9.log

Project	Chrysler Dayton Thermal P	roducts	Boring Number	SB-10		
Location	Dayton, Ohio		Date Started	10/21/94		
Client	Chrysler Corporation			10/21/94		
Driller	Moody's of Dayton		Drilling Method	4.25" HSA,	CME 75	
Elevation	752.33 MSL		Page Number	1 of	1	
Water Lev	el & Date ~27 ft BGS	10/21/94	Logged By	Thompson		

wat.er .	Level 8	Date	·	-27 ft I	BGS 10/21/94 Logged By	Thompson
Depth BGS (ft)	Int- erval		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test,Wtr Depth
5	4-6	S1	1.3	13-16 17-20 (33)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	BG, BG, 1.0 ppm Dye Test - Neg.
_ 10	9-11	s2	2.0	35-40 22-20 (62)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Very Dense	BG, BG, 0.5 ppm Dye Test - Neg.
15	14-16	S 3	1.8	33-21 17-21 (38)		BG, BG, BG Dye Test - Neg.
_ 20	19-21	S4	1.8	13-18 20-28 (38)	Clay with Gravel and Sand (CH); Brownish Gray (5YR4/1); Moist; Dense	BG, BG, BG Dye Test - Neg.
25	24-26	S 5	1.9	15-22 24-45 (46)	Same as S4; Wet	BG, BG, BG Dye Test - Neg. Water Table
_ 30	29-31	S6	2.0	15-15 18-20 (33)	Well Graded Gravel with Clay and Sand (GW-GC); Moderate Brown (5YR 4/4); Wet; Dense	-27 ft BGS BG, 1.0,15 ppm Dye Test - Neg.
-						Backfilled with Grout 0-31 ft
 						<u> </u>

CLEAN TECH chrysb10.log

ATTACHMENT G

Quality Control Procedures for Soil Samples
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Quality Control Procedures for Soil Samples

Chrysler Corporation

Dayton Thermal Products Plant

Chemical Analysis

- Sample collection was done using new disposable latex gloves, laboratory prepared glassware, and thorough decontamination of the split spoon samplers. Decontamination of the split spoon samplers was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was then rinsed using deionized water, and a solution of 10% methanol and deionized water. The equipment was then allowed to air dry;
- Samples were labeled to show project name, boring number, depth interval, date, analysis requested, and the sampler's initials;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- Two soil sample duplicates were collected (ten percent duplicates);
- One equipment blank was collected (one per round of sampling);
- One matrix spike sample and one matrix spike duplicate sample were analyzed (one per round of sampling);
- The samples were shipped and received at the laboratory within the EPA standard holding times for each analysis.

Geotechnical Analysis

- Sample collection was completed using new disposable latex gloves, clean glassware, and thorough decontamination of the split spoon samplers. Decontamination of the split spoon samplers was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was rinsed using deionized water, and a solution of 10% methanol and deionized water. The equipment was then allowed to air dry;
- Samples were labeled to show project name, boring number, depth interval, date, analysis requested, and the sampler's initials.

ATTACHMENT I

Groundwater Monitoring Well Logs
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Project	Chrysler Dayton Thermal Products	Boring Number	MWA1
Location	Dayton, Ohio	Date Started	11/14/94
Client	Chrysler Corporation	Date Completed	11/14/94
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.43 MSL	Page Number	1 of 2
Water Lev	el & Date 26.2 ft BGS 11/17/94	Logged By	Thompson

Depth		Sample	2	SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Type	Rec.	Result	Symbol, Color, Moisture Content	Air Monitor Data
(ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 5 	4-6	S1	1.1	14-16 20-21 (36)	Well Graded Gravel with Sand (GW); Light Brownish Gray (5YR6/1); Dry; Dense	_ BG, BG, 0.5 ppm Dye Test - Neg.
_ 10	9-11	S2	1.2	23-29 18-18 (47)	Same as S1	BG, BG, 4.0 ppm Dye Test - Neg.
_ 15	14-16	S 3	1.4	24-25 23-25 (48)	Same as S2	_ BG, 10, 5 ppm Dye Test - Neg.
_ 20	19-21	S4	1.3	25-30 23-20 (53)	Same as S3; Very Dense	BG, 3, 10 ppm Dye Test - Neg.
_ 25	24-26	S5	1.6	20-25 26-33 (51)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Very Dense	BG, 3, 10 ppm Dye Test - Neg.
_ 30	29-31	S 6	1.8	38-25 25-30 (50)	Well Graded Gravel with Sand (GW); Brownish gray (5YR4/1); Wet; Very dense	BG, 6, 6 ppm Dye Test - Neg.
_ 35	34-36	s7	1.8	23-24 35-35 (59)	Top 1 ft same as S6; Bottom 0.8 ft Well Graded Sand (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 40, 15 ppm Dye Test - Neg.
1	i .	ļ	1			

CLEAN TECH chryall.log

Project	Chrysler Dayton Thermal P.	roducts	Boring Number	MWA1		
Location	Dayton, Ohio		Date Started	11/14/94		
Client	Chrysler Corporation		Date Completed	11/14/94		
Driller	Moody's of Dayton		Drilling Method	4.25" HSA,	CME 75	
Elevation	751.43 MSL		Page Number	2 of	2	
Water Lev	el & Date 26.2 ft BGS	11/17/94	Logged By	Thompson		

	.evel 8	. Duce		5.2 It I	365 11/1/94 Logged By	Thompson
Depth BGS (ft)	Int-		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 40	39-41	S8	1.9	27-38 40-44 (78)	Top 0.5 ft Well Graded Sand (SW); Bottom 1.4 ft Well Graded Gravel (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 10, 7 ppm Dye Test - Neg.
						Well Construction Total Depth 39 Screen 29-39 Sand 26.5-39 Bent. 23.8-26.5 Grout 0-23.8 Riser 0-29
~			-			Screen is 10 Slo Screen & Riser _2"PVC
~						

CLEAN TECH

N = Number Blows to Drive 2 "Spoon 24" with 140 lb. Weight Falling 30 "Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

chrysa12.log

Project.	Chrysler Dayton Thermal Pr	oducts	Boring Number	MWA2			
Location	Dayton, Ohio		Date Started	10/28,	/94		
Client	Chrysler Corporation		Date Completed	10/28,	/94		
Driller	Moody's of Dayton		Drilling Method	6.25"	HSA,	CME	75
Elevation	749.45 MSL		Page Number	1	of	2	
Water Lev	e. & Date 24.2 ft BGS	11/18/94	Logged By	Thor	npson		

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)		Type &No.		Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
_ 5	4-6	S1	1.1	21-25 24-25 (49)	Poorly Graded Gravel with Silt (GP-GM); Light Brownish Gray (5YR 6/1); Dry; Dense	BG, BG, BG, Dye Test - Neg.
- ¹⁰	9-11	S2	1.0	25-26 22-21 (48)	Same as Sl	BG, BG, 1.5 ppm Dye Test - Neg.
_ 15	14-16	s3	1.5	11-19 26-26 (45)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR 4/1); Dry; Dense	BG, BG, 10 ppm Dye Test - Neg.
_ 20	19-21	S4	1.3	17-24 24-22 (48)	Well Graded Sand with Silt and Gravel (SW-SM); Brownish Gray (5YR 4/1); Dry; Dense	BG, 20, 12 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.6	14-19 21-28 (40)	Well Graded Sand with Gravel (SW) Brownish Gray (5YR4/1); Wet; Dense	BG, 10, 4 ppm Dye Test - Neg.
_ 30	29-31	S6	1.8	19-22 19-23 (41)	Well Graded Gravel (GW); Brownish Gray (5YR4/1); Wet; Dense	_ 1, 17, 5 ppm Dye Test - Neg.
_ 35	34-36	s7	2.0	27-29 51-61 (80)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 4 ppm Dye Test - Neg.
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chrysa21.log

Project	Chrysler Dayton Thermal Products	Boring Number	MWA2			
Location	Dayton, Ohio	Date Started	10/28/94			
Client	Chrysler Corporation	Date Completed	10/28/94			
Driller	Moody's of Dayton	Drilling Method	6.25" HSA, CME 75			
Elevation	749.45 MSL	Page Number	2 of 2			
Water Lev	ei. & Date 24.2 ft BGS 11/18/94	Logged By	Thompson			

				Z IT BO	35 11/18/94 Logged By	Thompson
	Int- erval	Type &No.	Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 40	39-41	S8	2.0	22-25 29-41 (54)	Well Graded Gravel with Sand and Clay (GW-GC); Brownish Black (5YR 2/1); Wet; Very Dense	_ 1, 4, 4 ppm Dye Test - Neg.
_		-		·		Well Construction Total Depth 40 Screen 30-4 Sand 27-4 Bent. 23.5-2 Grout 0-23.5 Riser 0-30 Screen is 10 Slow Screen & Riser 2" PVC
				!		

CLEAN TECH chrysa22.log

Froject	Chrysler Dayton Thermal Pr	oducts	Boring Number	MWA3	
Location	Dayton, Ohio		Date Started	11/11/94	
Client	Chrysler Corporation		Date Completed	11/11/94	
Driller	Moody's of Dayton	-	Drilling Method	4.25" HSA,	CME 75
Elevation	752.19 MSL		Page Number	1 of	2
Water Lev	el & Date 26.8 ft BGS	11/18/94	Logged By	Thompson	

Depth		Sample	9	SPT	Description: Name & USCS Group	Remarks
BGS		Type		Result		Air Monitor Data
(ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 5	4-6	S1	1.6	12-12 15-15 (27)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Medium Dense	_ BG, BG, 0.5 ppm Dye Test - Neg.
_ 10	9-11	52	1.2	10-7 5-10 (12)	Same as S1	BG, BG, BG Dye Test - Neg.
_ 15	14-16	s3	0.8	7-5 4-7 (9)	Same as S2; Loose	BG, BG, BG Dye Test - Neg.
_ 20	19-21	S4	1.8	75-25 27-32 (52)	Clay with Gravel (CH); Moderate Yellowish Brown (10YR5/3); Dry; Very Dense	BG, BG, 2 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.6	17-20 23-30 (43)	Well Graded Sand (SW); Pale Yellowish Brown (10YR6/2); Dry; Dense	BG, BG, 12 ppm Dye Test - Neg.
_ 30	29-31	S6	1.8	27-22 33-40 (55)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	_ BG, BG, 70 ppm Dye Test - Neg.
35	34-36	s7	1.9	35-30 28-35 (58)	Same as S6; Orange Staining	_ BG, BG, 70 ppm Dye Test - Neg.

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chrysa31.log

Project	Chrysler Dayton Thermal Products	Boring Number	MWA3		
Location	Layton, Ohio	Date Started	11/11/94		
Client	Chrysler Corporation	Date Completed	11/11/94		
Driller	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75		
Elevation	752.19 MSL	Page Number	2 of 2		
Water Lev	el & Date 26.8 ft bgs 11/18/94	Logged By	Thompson		

Depth BGS	Int-	Sample	Pac	SPT	Description: Name & USCS Group Symbol, Color, Moisture Content,	Remarks Air Monitor Data
(ft)	erval			(N)	Relative Density or Consistency	Dye Test, WellCon
_ 40	39-41	S8	1.8	35-45 60-60 (105)	Well Graded Gravel with Sand and Some Clay (GW); Brownish Gray (5YR 4/1); Wet; Very Dense	BG, BG, 5 ppm Dye Test - Neg.
_						Well Construction
						Total Depth 39 Screen 29-39 Sand 27-29 Bent. 25-27
_						Grout 0-25 Riser 0-29 Screen is 10 Slot
						Screen & Riser
						_
_		3				
						_

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chrysa32.log

Project	Chrysler Dayton Thermal I	Products	Boring Number	MWA4	
Location	Dayton, Ohio		Date Started	10/24/94	
Client	Chrysler Corporation		Date Completed	10/24/94	
Driller	Moody's of Dayton		Drilling Method	6.25" HSA,	CME 75
Elevation	751.27 ft MSL		Page Number	1 of	2
Water Lev	el & Date 25.8 ft BGS	11/19/94	Logged By	Thompson	

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval	Type	1 .	Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
		uno:	(10)	(24)	Notative benefity of constituting	byc lese, welloon
_ 5	4-6	S1	0.8	8-13 10-12 (23)	Well Graded Sand with Gravel and Silt (SW-SM); Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, BG Dye Test - Neg.
_ 10	9-11	S2	1.3	12-14 30-33 (44)	Same as S1; Dense; Larger Grains	BG, BG, 1.5 ppm Dye Test - Neg.
_ 15	14-16	S 3	1.5	18-18 15-15 (33)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
20	19-21	S4	1.7	45-90 60-90 (150)	Well Graded Gravel with Sand and Clay (GW-GC); Light Brownish Gray (5YR6/1); Dry; Very Dense	BG, BG, 50 ppm Dye Test - Neg.
_ 25	24-26	S5	1.9	14-16 21-25 (37)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Dense	BG, 8, 75 ppm Dye Test - Pos.
_ 30	29-31	S 6	2.0	13-10 25-29 (35)	Poorly Graded Sand with Gravel (SP); Brownish Black (5YR2/1); Wet; Dense	BG, 13, 80 ppm Dye Test - Neg.
35	34-36	S7	2.0	22-23 30-30 (53)	Same as S6; Very Dense	BG, 40, 80 ppm Dye Test - Neg.
 L						

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chrya41.log

Project Chrysler Dayton Thermal Products Boring Number MWA4 Location Dayton, Ohio Date Started 10/24/94 Client Chrysler Corporation Date Completed 10/24/94 Driller Moody's of Dayton
Elevation 751.27 ft MSL 6.25" HSA, Drilling Method Page Number 25.8 ft BGS Logged By Water Level & Date 11/19/94 Thompson

Hacci .	Level 8	x Date		25.8 ft	BGS 11/19/94 Logged By	Thompson
Depth BGS (ft)			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 40	39-41	S8	2.0	35-40 45-75 (85)	Poorly Graded Sand with Silt (SW-SM) Brownish Black (5YR2/1); Wet; Very Dense	BG, 20, 100 ppm Dye Test - Neg.
_ 45	44-46	S9	2.0	50-52 70 (122)	Same as S8	_ 2, 40, 60 ppm _ Dye Test - Neg.
						Well Construction Total Depth 45
						Screen 35-45 Sand 32.5-45 Bent. 28.7-32.5 Grout 0-28.7
_						Riser 0-35 Screen is 10 Slot Screen & Riser 2" PVC
_						_
_						_
						l l

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chrya42.log

N = Number Blows to Drive $\underline{2}$ " Spoon $\underline{24}$ " with $\underline{140}$ lb. Weight Falling $\underline{30}$ " Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

Project	Chrysler I	ayton Thermal	l Products	Boring Number	MWA5		
Location	Dayton, Oh	nio		Date Started	11/15	/94	
Client	Chrysler C	crporation		Date Completed	11/15	/94	
Driller	Moody's of	Dayton		Drilling Method	4.25"	HSA,	CME 75
Elevation	751.25 ft	MSL		Page Number	1	of	2
Water Lev	el & Date	26 ft BGS	11/18/94	Logged By	Thomp	son	

Depth		Sample)	SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Туре	Rec.	l .	Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 5	4-6	S1	1.3	10-11 14-21 (25)	Well Graded Gravel with Silt and Clay (GW-GC); Light Brownish Gray (5YR6/1); Dry; Medium Dense	_ BG, BG, 1 ppm Dye Test - Neg.
_ 10	9-1	S 2	1.2	11-12 25-30 (37)	Well Graded Gravel with Silt (GW-GM); Light Brownish Gray (5YR 6/1); Dry; Dense	BG, BG, 3 ppm Dye Test - Neg.
_ 15	14-16	S 3	1.2	20-19 15-20 (34)	Poorly Graded Sand with Gravel (SP); Brownish Gray (5YR4/1); Dense; Dry	BG, BG, 3 ppm Dye Test - Neg.
_ 20	19-21	S4	1.0	20-55 44-40 (99)	Well Graded Gravel with Clay (GW-GC) Grayish Brown (5YR3/2); Moist; Very Dense	BG, BG, 4 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.5	34-60 40-40 (100)	Well Graded Gravel with Sand and Clay (GW-GC) Grayish Brown (5YR3/2) Wet; Dense	BG, BG, 4 ppm Dye Test - Neg.
30	29-31	S6	1.7	18-22 24-25 (46)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dense; Wet	BG, BG, 6 ppm Dye Test - Neg.
35	34-36	S7	2.0	21-23 23-25 (46)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dense; Wet	_ BG, BG, 5 ppm Dye Test - Neg.
	l					15

CLEAN TECH chrya511.log

Project Chrysler Dayton Thermal Products	Boring Number MWA5
Location Dayton, Ohio	Date Started 11/15/94
Client Chrysler Corporation	Date Completed 11/15/94
Driller Moody's of Dayton	Drilling Method 4.25" HSA, CME 75
Elevation 751.25 ft MSL	Page Number 2 of 2
Water Level & Date 26 ft BGS 11/18/94	1 Logged By Thompson

Vater :	Level 8	& Date	<u></u>	26 ft B0	SS 11/18/94 Logged By	Thompson
Depth BGS (ft)	Int- erval	Type &No.	Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	25-19 40-7 (59)	Top foot same as S7; Bottom foot Poorly Sorted Sand (SP); Dark Yellowish Brown (10YR4/2); Dense; Wet	BG, BG, 6 ppm Dye Test - Neg.
_						Well Construction Total Depth 39 Screen 29-39 Sand 27-39
_						Bent. 24.5-2' Grout 0-24.5 Riser 0-29 Screen is 10 Slo
_						Screen & Riser
_						_
						_
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chrya52.log

Project.	Chrysler Daytor	Thermal P	roducts	Boring Number	MWA6	
Location	Dayton, Ohio			Date Started	10/25/94	
Client	Chrysler Corpor	ation		Date Completed	10/25/94	
Driller	Moody's of Dayt	on		Drilling Method	6.25" HSA,	CME 75
Elevation	751.75 ft MSL			Page Number	1 of	2
Water Lev	el & Date 26.	5 ft BGS	11/17/94	Logged By	Thompson	

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval			Result	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
				(=:/		
_ 5	4-6	S1	1.2	8-9 11-14 (20)	Gravelly Clay with Sand (CH); Dark reddish brown (10YR2/2); Moist; Dense	BG, BG, BG, Dye Test - Neg.
_ 10 '	9-11	S2	1.3	10-15 17-16 (32)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 3 ppm Dye Test - Neg.
_ 15	14-16	S 3	1.8	22-25 25-56 (50)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 1 ppm Dye Test - Neg.
_ 20	19-21	S4	1.0	7-13 17-27 (30)	Same as S3; Moist; Dense	BG, BG, BG Dye Test - Neg.
_ 25	24-26	S 5	1.8	9-9 11-12 (20)	Well Graded Sand (SW); Brownish Gray (5YR4/1); Moist; Medium Dense	_ BG, BG, 3 ppm
_ 30	29-31	S6	2.0	17-25 30-40 (55)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 4 ppm Dye Test - Neg.
35	34-36	s7	2.0	22-18 18-30 (36)	Well Graded Gravel with Sand (GW); Brownish Black (5YR2/1); Wet; Dense	_ BG, BG, 4 ppm Dye Test - Neg.

CLEAN TECH

chrya61.log

Project.	Chrysler Dayton Thermal Produc	ts	Boring Number	MWA6	
Location	Dayton, Ohio		Date Started	10/25/94	
Client	Chrysler Corporation		Date Completed	10/25/94	
Driller	Moody's of Dayton		Drilling Method	6.25" HSA,	CME 75
Elevation	751.75 ft MSL		Page Number	2 of	2
Water Lev	el & Date 26.5 ft BGS	11/17/94	Logged By	Thompson	

	evel (y Date		26.5 ft	BGS 11/1/94 Logged By	Thompson
Depth BGS (ft)	Int-		Rec.		Description: Name & USCS Group Symbol, Color, Moisture Content Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 40	39-41	S8	2.0	15-15 20-22 (35)	Same as S7; Wet	_ BG, BG, 5 ppm Dye Test - Neg.
						Well Construction Total Depth 40 Screen 30-40 Sand 27.5-40 Bent. 24-27.9 Grout 0-24 Riser 0-30
			-			Screen is 10 Slo- Screen & Riser _2" PVC
_				,		_
						_

CLEAN TECH chrya62.log

Project	Chrysler D	ayton Thermal Pr	oducts	Boring Number	MWB1			
Location	Dayton, Oh	io		Date Started	10/27/	94		
Client	Chrysler Co	orporation		Date Completed	10/28/	94		
Driller	Moody's of	Dayton		Drilling Method	6.25"	HSA,	CME	75
Elevation	744.93 ft 1	MSL		Page Number	1	of	3	_
Water Lev	el & Date	19.8 ft BGS	11/19/94	Logged By	Thomp	son		

						
Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Type	Rec.	Result	Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
<u></u>						
j			İ			
i i						
ij į						
5	4-6	S1	1.1	2-2	Clay with gravel (CH); Dark Gray	BG, BG, BG
-				4-5	(N3); Moist; Firm	Dye Test - Neg.
				(6)		
10	9-11	S2	1.4	6-6	Well graded gravel and sand (GW);	BG, BG, 0.2 ppm
			l	10-13	<pre>Light Brownish Gray (5YR6/1); Dry;</pre>	Dye Test - Neg.
	}			(16)	Dense	
		ļ	ļ			
<u> </u>	_	ļ	ļ	_		
_ 15	14-16	S3	1.9	20-30	Well Graded Gravel with Sand and	_ BG, BG, 0.5 ppm
}		1		18-18	Clay (GW-GC); Moderate Reddish Brown	Dye Test - Neg.
				(48)	(10YR4/6); Dry; Dense	
<u> </u>		ļ				
_ 20	19-21	S4	1.5	18-16	Well Graded Gravel (GW); Grayish	DG DG 0 3
]			1	12-17	Brown (5YR3/2); Medium Dense; Wet	_ BG, BG, 0.2 ppm
		ļ	ļ	(28)		Dye Test - Neg.
			ļ			
25	24-26	S5	2	30-30	Well Creded Crewel with Sand (CW):	
- 45	24-20	35	2.0	30-30	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Very Dense;	BG, BG, BG
		ĺ	l	(60)	Wet	Dye Test - Neg.
				(00)		Dyc 1c3c Neg.
		j				
30	29-31	s6	1.9	20-18	Well Graded Gravel (GW); Grayish	
"	1		+• /	18-25	Brown (5YR3/2); Medium Dense; Wet	BG, BG, BG
			ĺ	(36)	District (Sins) 2// Hearan Dones, Not	Dye Test - Neg.
				(55)		-,
<u> </u>]					
35	34-35	S7	2.0	30-25	Top foot same as S6; Bottom foot	
		- ·		28-35	Well Graded Gravel with Clay(GW-GC);	BG, BG, BG
				(53)	Moderate Yellowish Brown (10YR4/2);	Dye Test - Neg.
	1	1	ļ	(/	Very Dense; Wet	
i i		ŀ			•	
į	ļ	į		į		
ii '	'	,	,			·

CLEAN TECH chryb11.log

N = Number Blows to Drive 2 "Spoon 24 "with 140 lb. Weight Falling 30 "Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

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Project	Chrysler Da	ayton Thermal E	Products	Boring Number	MWB1			
Location	Dayton, Oh:	io _		Date Started	10/27,	/94		
Client	Chrysler Co	orporation		Date Completed	10/28,	/94		
Driller	Moody's of	Dayton		Drilling Method	6.25"	HSA,	CME	75
Elevation	744.93 ft 1	MSL		Page Number	2	of	,	3
Water Lev	el & Date	19.8 ft BGS	11/19/94	Logged By	Thom	oson		

Depth	9	Sample		SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Туре	Rec.	Result	Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 40	39-41	S8	2.0	22-23 20-23 (43)	Well Graded Gravel (GW); Moderate Brown (5YR4/4); Medium Dense; Wet	BG, BG, BG Dye Test - Neg.
_ 45	44-46	S9	1.4	17-48 28-18 (76)	Same as S8 with a 1 Inch Layer of Poorly Graded Sand at the Sample Bottom (SP); Brownish Black (5YR 2/1); Very Dense	BG, BG, BG Dye Test - Neg.
_ 50	49-51	S10	2.0	37-31 42-78 (73)	Poorly Graded Sand (SP); Medium Dark Gray (N4); Very Dense; Wet	BG, BG, BG Dye Test - Neg.
_ 55	54-56	S11	2.0	27-19 30-4 (49)	Well Graded Gravel with Sand (GW); Dark Gray (N3); Wet; Dense	BG, BG, BG Dye Test - Neg.
_ 60	59-61	S12	2.0	36-28 34-38 (62)	Same as S11; Very Dense	BG, BG, BG Dye Test - Neg.
- 65	64-66	S13	2.0	35-46 40-40 (86)	Top foot same as S12; Bottom foot Well Graded Gravel with Dense Clay (GW-GC); Dark Gray (N3); Wet; Very Dense	_ BG, BG, Bg Dye Test - Neg.
_ 70	69-71	S14	2.0	31-42 45-46 (87)	Same as S13	BG, BG, BG Dye Test - Pos. Oil from Clay Suspected Source

CLEAN TECH

chryb12.log

Project	Chrysler Dayton Thermal Produ	icts	Boring Number	MWB1
Location	Dayton, Ohio		Date Started	10/27/94
Client	Chrysler Corporation		Date Completed	10/28/94
Driller	Moody's of Dayton	 _	Drilling Method	6.25" HSA, CME 75
Elevation	744.93 ft MSL		Page Number	3 of 3
Water Lev	el & Date 19.8 ft BGS	11/19/94	Logged By	Thompson

	-				11/13/34 Hogged by	
			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 75	74-76	s15	2.0	44-140 (188)	Clay (CH); Greenish Gray (5GY6/1); Hard	_ BG, BG, BG Dye Test - Neg.
						Well Construction Total Depth 74 Screen 64-74 Sand 61-74 Bent. 58-61 Grout 0-58
						Riser 0-64 Screen is 10 Slot Screen & Riser 2" PVC
						_
						<u> </u>

CLEAN TECH chryb13.log

Project:	Chrysler Dayton Thermal Produ	icts	Boring Number	MWB2	
Location	Dayton, Ohio		Date Started	11/16/94	
Client	Chrysler Corporation		Date Completed	11/17/94	
Driller	Moody's of Dayton		Drilling Method	4.25" HSA,	CME 75
Elevation	751.62 ft MSL		Page Number	1 of	3
Water Lev	el & Date 26.8 ft BGS	11/19/94	Logged By	Thompson	

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval	Type &No.		Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
_ 5	4-6	S1	1.2	10-17 18-17 (35)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, BG, 1 ppm Dye Test - Neg.
_ 10	9-11	S2	1.3	35-33 30-30 (63)	Same as S1; Some Silt; Very Dense	BG, BG, 2 ppm Dye Test - Neg.
_ 15	14-16	s3	1.5	11-18 19-18 (37)	Same as S2; Larger Grains; Moist	BG, BG, 2 ppm Dye Test - Neg.
_ 20	19-21	S4	0.6	55- <u>50</u> 1"	Same as S3; Moist	BG, BG, 3 ppm Dye Test - Neg.
_ 25	24-26	S 5	1.8	35-35 38-43 (73)	Top 0.5 ft same as S4; Bottom 1.3 ft Poorly Graded Sand (SP); Brownish Gray (5YR4/1); Dry; Very Dense	BG, 1, 7 ppm Dye Test - Neg.
_ 30	29-31	S6	1.9	27-33 36-35 (69)	<pre>Well Graded Gravel (GW); Grayish Brown (5YR3/2); Wet; Very Dense; Orange Staining</pre>	BG, BG, 1 ppm Dye Test - Neg.
_ 35	34-36	S7	1.9	31-20 19-25 (39)	Well Graded Sand with Gravel (SW); Grayish Brown (5YR3/2); Wet; Dense	BG, BG, 0.5 ppm Dye Test - Neg.

CLEAN TECH chryb21.log

Project	Chrysler Dayton Thermal Products		Boring Number	MWB2
Location	Dayton, Ohio		Date Started	11/16/94
Client	Chrysler Corporation		Date Completed	11/17/94
Driller	Moody's of Dayton		Drilling Method	4.25" HSA, CME 75
Elevation	751.62 ft MSL		Page Number	2 of 3
Water Lev	el & Date 26.8 ft BGS 11/19	/94	Logged By	Thompson

		Date		0.0 16 1	11/19/94 Logged By	THOMPSON
Depth BGS (ft)	Int- erval			SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
40	39-41	S8	2.0	20-21 18-25 (39)	Top 1.5 ft same as S7; Bottom 0.5 ft Well Graded Gravel with Sand and Clay (GW-GC); Pale Yellowish Brown (10YR6/2); Wet; Dense	_ BG, 2 ppm, BG Dye Test - Neg.
_ 45	44-46	S 9	2.0	25-25 30-33 (55)	Same as bottom 0.5 foot of S8	BG, BG, BG Dye Test - Neg.
_ 50	49-51	S10	2.0	25-27 30-30 (57)	Same as S9	BG, BG, BG Dye Test - Neg.
55 	54-56	S11	2.0	25-28 25-30 (53)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	_ BG, BG, BG Dye Test - Neg.
_ 60	59-61	S12	2.0	30-32 40-75 (72)	Poorly Graded Sand (SP); Brownish Black (5YR2/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
_ 65	64-66	s13	2.0	35-45 32-40 (77)	Well Graded Gravel with Sand and Some Clay (SW); Brownish Black (5YR 2/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
70 	69-71	S14	2.0	35-34 40-44 (74)	Same as S13	_ BG, BG, BG Dye Test - Pos.
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CLEAN TECH

chryb22.log

Project	Chrysler Dayton Thermal Products	Boring Number	MWB2
Location	Dayton, Ohio	Date Started	11/16/94
Client	Chrysler Corporation	Date Completed	11/17/94
Drillex	Moody's of Dayton	Drilling Method	4.25" HSA, CME 75
Elevation	751.62 ft MSL	Page Number	3 of 3
Water Lev	el & Date 26.8 ft BGS 11/19/94	Logged By	Thompson

Depth		Sample	3	SPT	Description: Name & USCS Group	Remarks
BGS	Int-				Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval			(N)	Relative Density or Consistency	Dye Test, WellCon
_ ⁷⁵	74-76	S15	2.0	47-38 50-66 (88)	Same as S14	_ BG, BG, BG Dye Test - Pos.
_ 80	79-81	S16	2.0	40-42 53-100 (95)	Same as S15	_ BG, BG, BG Dye Test - Pos.
<u> </u>	84-86	S17	2.0	55-66 68 (134)	Poorly Graded Sand (SP); Dark Gray (N3); Wet; Very Dense	_ BG, BG, BG Dye Test - Pos.
_ 90	89-91	S18	2.0		Clay with Gravel (CH); Olive Gray (5Y4/1); Very Hard	BG, BG, BG Dye Test - Pos.
						Total Depth 89 Screen 79-89 Sand 76.4-89 Bent. 70-76.4 Grout 0-70 Riser 0-79
						_Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chryb23.log

Project	Chrysler Dayton Thermal P.	Boring Number	MWB3		
Location	Dayton, Ohio		Date Started	11/3/94	_
Client	Chrysler Corporation		Date Completed	11/4/94	_
Driller	Moody's of Dayton		Drilling Method	4.25" HSA, CME 75	5
Elevation	752.13 ft MSL		Page Number	1 of 2	_
Water Lev	el & Date 26.8 ft BGS	11/19/94	Logged By	Thompson	-

Death				C D m	Description: Name & HSGS Cream	Romanica
Depth BGS		Sample Type		SPT	Description: Name & USCS Group Symbol, Color, Moisture Content,	Remarks Air Monitor Data
(ft)	erval		(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
(10)	0170.1	4110.	(10)	(21)	Relative Benefity of Generations	Dye rese, werreen
5	4-6	s1	0.9	27-18 18-22 (36)	Well Graded Gravel with Sand and Silt (GW-GM); Light Brownish Gray (5YR6/1); Dry; Dense	_ BG, BG, 0.2 ppm Dye Test - Neg.
_ 10	9-11	S2	1.2	25-20 14-13 (34)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 0.5 ppm Dye Test - Neg.
_ 15	14-16	s 3	1.6	15-17 28-18 (45)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Dense	_ BG, BG, 0.5 ppm Dye Test - Neg.
_ 20	19-21	S4	1.8	12-30 37-35 (67)	Top 0.5 ft same as S3; Bottom 1.3 ft Clay with gravel (CH); Dark Greenish Gray (5GY4/1); Moist; Hard; Orange Staining	BG, BG, 2 ppm Dye Test - Neg.
_ 25	24-26	S 5	2.0	27-30 27-22 (57)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Moist; Very Dense; Orange Staining	_ BG, BG, 5 ppm Dye Test - Neg.
_ 30	29-31	S6	1.7	17-21 28-27 (49)	Same as S5; Wet; Dense	BG, BG, 8 ppm Dye Test - Neg.
_ 35	34-36	s7	2.0	41-47 37-36 (84)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	_ BG, BG, 15 ppm Dye Test - Neg.
			l			

CLEAN TECH chryb31.log

Project.	Chrysler Dayton Thermal Produ	icts	Boring Number	MWB3
Location	Dayton, Ohio		Date Started	11/3/94
Client	Chrysler Corporation		Date Completed	11/4/94
Driller	Moody's of Dayton		Drilling Method	4.25" HSA, CME 75
Elevation	752.13 ft MSL		Page Number	2 of 2
Water Lev	rel & Date 26.8 ft BGS	11/19/94	Logged By	Thompson

Water I	.eve1 9	y Date		5.8 ft F	BGS 11/19/94 Logged By	Thompson
Depth BGS (ft)	Int- erval		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
_ 40	39-41	S8	1.8	20-30 27-35 (57)	Same as S7; More Gravel	BG, BG, 5 ppm Dye Test - Pos.
_ 45	44-46	S 9	1.8	40-40 50-60 (90)	Same as S8	BG, BG, 20 ppm Dye Test - Neg.
_ 50	49-51	S10	1.2	32-30 34-35 (64)	Same as S9	BG, 0.4, 5 ppm Dye Test - Neg.
55 55	54-56	S11	1.2	22-20 30-34 (50)	Top 0.5 ft Sandy Clay (CH); Moderate Yellowish Brown (10YR5/4); Bottom 0.7 ft Clay (CH); Light Olive Gray (5Y6/1); Wet; Hard	_ BG, BG, 2 ppm Dye Test - Pos.
_ 60	5961	S12	1.0	15-30 30-45 (60)	Clay (CH); Olive Gray (5Y4/1); Moist; Very Hard	BG, 10 ppm, BG Dye Test - Neg.
						Well Construction Total Depth 60 Screen 46-56 Sand 43-60 Bent. 38-43 Grout 0-38 Riser 0-46
						Screen is 10 Slot Screen & Riser 2"PVC

CLEAN TECH chryb32.log

Project	Chrysler Dayton Thermal Products		Boring Number	MWB 4
Location	Dayton, Ohio		Date Started	10/31/94
Client	Chrysler Corporation		Date Completed	11/2/94
Driller	Moody's of Dayton		Drilling Method	6.25" HSA, CME 75
Elevation	751.64 ft MSL		Page Number	1 of 3
Water Lev	el & Date 26.9 ft BGS 11	/19/94	Logged By	Thompson

Depth.	9	Sample	· · · · · · · ·	SPT	Description: Name & USCS Group	Remarks
BGS	Int-				Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval			(N)	Relative Density or Consistency	Dye Test, WellCon
_ 5	4-6	S1	1.0	8-10 15-18 (25)	Well Graded Gravel with Silt and Clay (GW-GM); Light Brownish Gray (5YR6/1); Dry; Medium Dense	_ BG, BG, BG Dye Test - Neg.
_ 10	9-11	s2	0.9	10-13 26-30 (39)	Same as S1	_ BG, BG, BG Dye Test - Neg.
_ 15	14-1.6	s3	0.8	20-20 18-18 (38)	Same as S2	BG, BG, 0.5 ppm Dye Test - Neg.
_ 20	19-21	S4	2.0	37-25 25-30 (50)	Well Graded Sand with Silt and Gravel (SW-SM); Brownish Gray (5YR4/1); Dry; Dense	BG, BG, 1 ppm Dye Test - Neg.
_ 25	24-26	S 5	0.5		Same as S4; Very Dense	BG, BG, 1 ppm Dye Test - Neg.
_ 30	29-31	S6	2.0	20-28 31-40 (59)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	_ BG, BG, BG Dye Test - Neg.
_ 35	34-36	S7	2.0	34-52 48-53 (100)	Well Graded Gravel with Clay (GW-GC) Pale Brown (5YR5/2); Wet; Very Dense	_ BG, BG, BG Dye Test - Neg.

CLEAN TECH

chryb41.log

Project	Chrysler Dayton Thermal Pro	Boring Number	MWB 4		
Location	Dayton, Ohio		Date Started	10/31/94	
Client	Chrysler Corporation	Date Completed	11/2/94		
Driller	Moody's of Dayton		Drilling Method	6.25" HSA,	CME 75
Elevation	751.64 ft MSL		Page Number	2 of	3
Water Lev	el & Date 26.9 ft BGS	11/19/94	Logged By	Thompson	

Depth		Sample)	SPT	Description: Name & USCS Group	Remarks
BGS (55)	Int-				Symbol, Color, Moisture Content,	Air Monitor Data
(ft)	erval	&NO.	(It)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 40	39-41	S8	2.0	26-31 43-44	Same as S7; Very Dense	BG, BG, BG Dye Test - Neg.
45	44-46	S9	2.0	(74)	Well Graded Gravel with Sand and	BG, BG, BG
-	40.53			42-56 (84)	Clay (GW-GC); Pale Brown (5YR5/2); Wet; Very Dense	Dye Test - Neg.
_ 50	49-51	S10	2.0	34-35 44-48 (79)	Well Graded Sand with Clay (SW-SC); Pale Brown (5YR5/2); Wet; Very Dense	_ BG, BG, BG Dye Test - Neg.
_ 55	54-56	s11	2.0	50-43 44-50 (87)	Well Graded Gravel with Clay (GW-GC) Pale Brown (5YR5/2); Wet; Very Dense	_ BG, BG, BG Dye Test - Neg.
_ 60	59-61	S12	2.0	57-60 65-70 (125)	Same as S11	_ BG, BG, BG Dye Test - Neg.
65	64-65	S13	2.0	44-49 48-56 (97)	Same as S12	_ BG, BG, BG Dye Test - Neg.
70	69-71	S14	2.0	32-55 60-64 (115)	Same as S13	_ BG, BG, BG Dye Test - Neg.

CLEAN TECH chryb42.log

Project Chrysler Dayton Thermal Products Boring Number MWB4 Location Dayton, Ohio Date Started 10/31/94 Client Chrysler Corporation
Oriller Moody's of Dayton Date Completed 11/2/94 6.25" HSA, Drilling Method Elevation 751.64 ft MSL Page Number of Water Level & Date 26.9 ft BGS 11/19/94 Logged By Thompson

	ever a			J. J I C I	11/15/54 Hogged By	111011125011
Depth BGS (ft)			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
BGS	Int-	Type &No.	Rec. (ft)	Result (N)	Symbol, Color, Moisture Content,	Air Monitor Data
						_Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chryb43.log

Project:	Chrysler Dayton Thermal P	roducts	Boring Number	MWB5
Location	Layton, Ohio		Date Started	11/7/94
Client	Chrysler Corporation		Date Completed	11/8/94
Driller	Moody's of Dayton		Drilling Method	4.25" HSA, CME 75
Elevation	750.73 ft MSL		Page Number	1 of 3
Water Lev	el & Date 26.8 ft BGS	11/15/94	Logged By	Thompson

Depth		Sample	<u> </u>	SPT	Description: Name & USCS Group	Remarks
BGS	Int-	Туре			Symbol, Color, Moisture Content,	Air Monitor Data
(:ft)	erval	&No.	(ft)	(N)	Relative Density or Consistency	Dye Test, WellCon
_ 5	4-6	S1	1.5	8-12 13-12 (25)	Sandy Clay (CL); Dark Reddish Brown (10YR3/4); Dry; Very Stiff	_ BG, BG, BG Dye Test - Neg.
2.0	9-11	S2	1.1	10-12 12-16 (24)	Well Graded Gravel with Silt (GW-GM) Light Brownish Gray (5YR6/1); Dry; Medium Dense	BG, BG, 0.2 ppm Dye Test - Neg.
15	14-16	S 3	0.7	18-57 (75)	Same as S2; Larger Gravel	_ BG, BG, BG Dye Test - Neg.
_ 20	19-21	S4	1.1	43-50 50/3" (100)	Top 0.5 ft same as S3; Bottom 0.5 ft Well Graded Sand (SW); Dark Reddish Brown (10YR3/4); Dry; Very Dense	BG, 0.2ppm, BGDye Test - Neg.
25	24-26	S5	1.7	33-22 24-30 (46)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Dense	_ BG, BG, 0.5 ppm Dye Test - Neg.
30	29-31	S6	1.8	22-22 22-26 (44)	<pre>Well Graded Sand (SW); Brownish Gray (5YR4/1); Wet; Dense</pre>	_ BG, BG, 0.2 ppm Dye Test - Neg.
35	34-36	\$7 	2.0	20-27 25-25 (52)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, 0.2 ppm Dye Test - Neg.

CLEAN TECH chryb51.log

Project Chrysler Dayton Thermal Prod	ct Chrysler Dayton Thermal Products						
Location Dayton, Ohio		Date Started	11/7/9	94			
Client Chrysler Corporation	Chrysler Corporation				11/8/94		
Driller Moody's of Dayton		Drilling Method	4.25"	HSA,	CME	75	
Elevation 750.73 ft MSL		Page Number	2	of	3		
Water Level & Date 26.8 ft BGS	11/15/94	Logged By	Thom	oson			

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval			Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
	C1 VC.1	41.0.	(10)	(117	refresh benefit, of completency	bye rese, werreen
_ 40	39-41	S8	1.2	35-53 75 (128)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
_ 45	44-46	S9	2.0	33-35 50-50 (85)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Neg.
_ 50	49-51	s10	2.0	31-30 28-36 (58)	Well Graded Gravel with Sand (GW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
55	54-56	S11	1.5	35-35 54-65 (89)	Same as S10; Larger Gravel	BG, BG, BG Dye Test - Pos.
_ €0	59-61	S12	1.6	60-60 50-55 (110)	Same as S11	BG, BG, BG Dye Test - Pos.
65	64-66	S13	1.5	50-40 50-60 (90)	Same as S12; Some Clay	BG, BG, BG Dye Test - Pos.
70	69-71	S14	1.3	55-53 68-73 (121)	Same as S13	BG, BG, BG Dye Test - Pos.
				 		

CLEAN TECH chryb52.log

Project	Chrysler Dayton Thermal P	Products	Boring Number MWB5			
Location	Dayton, Ohio		Date Started	11/7/94		
Client	Chrysler Corporation	- 	Date Completed	11/8/94		
Driller	Moody's of Dayton		Drilling Method	4.25" HSA,	CME 75	
Elevation	750.73 ft MSL		Page Number	3 of	3	
Water Lev	el & Date 26.8 ft BGS	11/15/94	Logged By	Thompson		

Danth		· · · · · · · · · · · · · · · · · · ·		CD/III	Description: Name & HSGS Group	Doma mis a
Depth BGS (ft)			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
				-		
_ 75	74-76	S15	1.5	40-58 53-60 (111)	Same as S14	BG, BG, BG Dye Test - Pos.
_ 80	79-81	S16	1.6	40-50 50-50 (100)	Same as S15	_ BG, BG, BG Dye Test - Pos.
_ 85	34-86	s17	1.4	50-65 50-50 (115)	Same as S16	BG, BG, BG Dye Test - Pos.
<u>9</u> 0	39-91	S18	2.0	22-25 35-40 (60)	Top 1.5 ft Well Graded Sand with Clay (SW-SC); Dark Greenish Gray (5GY 4/1); Bottom 0.5 ft Clay (CH); Dark Greenish Gray (5GY4/1); Wet; Very Dense	BG, BG, BG Dye Test - Pos.
			ļ		•	_
					Note: Positive Dye Tests Likely Result of Oil in Clay Units	Well Construction
						Total Depth 90 Screen 80-90 Sand 75.5-90 Bent. 70.5-75.5 Grout 0-70.5
						Riser 0-80
						Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH chryb53.log

Project	Chrysler Dayton 7	hermal P	roducts	Boring Number	MWB6	
Location	Dayton, Ohio			Date Started	11/9/94	
Client	Chrysler Corporat	ion		Date Completed	11/10/94	
Driller	Moody's of Daytor	1		Drilling Method	4.25" HSA,	CME 75
Elevation	751.37 ft MSL			Page Number	1 of	2
Water Lev	el. & Date 25.9 1	t BGS	11/18/94	Logged By	Thompson	

Depth BGS	Int-	ample		SPT	Description: Name & USCS Group Symbol, Color, Moisture Content,	Remarks Air Monitor Data
(ft)	erval			(N)	Relative Density or Consistency	Dye Test, WellCon
5	4-6	S1	1.2	15-16	Well Graded Gravel with Silt and	BG, BG, 0.5 ppm
			1.2	20-25	Sand (GW-GM); Pale Yellowish Brown (10YR6/2); Medium Dense	Dye Test - Neg.
_ 10	9-11	S2	1.5	25-25 16-15 (41)	Well Graded Gravel with Sand (GW); Pale Yellowish Brown (10YR6/2); Dry; Medium Dense	BG, BG, 2 ppm Dye Test - Neg.
_ 1.5	14-16	S 3	1.4	10-11 11-12 (22)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Moist; Medium Dense	BG, BG, 1 ppm Dye Test - Neg.
_ 20	19-21	S4	1.8	21-28 26-22 (54)	Well Graded Gravel with Sand and Silt (GW-GM); Brownish Gray (5YR 4/1); Dry; Very Dense	BG, BG, 5 ppm Dye Test - Neg.
25	24-25	\$5	1.8	15-20 19-21 (39)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Dry; Medium Dense	BG, 2, 14 ppm Dye Test - Neg.
30	29-31	S6	1.6	38-34 25-25 (59)	Well Graded Gravel with Sand and Some Clay (GW); Dark Yellowish Brown (10YR4/2); Wet; Very Dense	BG, 2, 8 ppm Dye Test - Neg.
_ 35	34-36	s 7	1.7	20-20 18-25 (38)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Medium Dense; Orange Staining	BG, 3, 5 ppm No Dye Test

CLEAN TECH chryb61.log

Project	Chrysler Dayton Thermal Pro	ducts	Boring Number	MWB6			
Location	Dayton, Ohio		Date Started	11/9/94			
Client	Chrysler Corporation		Date Completed	11/10/94			
Driller	Moody's of Dayton		Drilling Method	4.25" HSA, CME	75		
Elevation	751.37 ft MSL		Page Number	2 of 2			
Water Lev	el & Date 25.9 ft BGS	11/18/94	Logged By	Thompson			

Depth				SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval			Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
					·	
40	39-41	S8	1.4	26-25 40-50 (65)	Well Graded Sand with Gravel (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 1, 5 ppm Dye Test - Pos.
_ 45	44-46	S9	1.2	20-33 48-56 (81)	Clay with Gravel (CH); Olive Gray (5Y4/1); Moist; Very Dense	BG, 0.5, 2 ppm Dye Test - Pos.
_ 50	49-51	S10	1.0	38-47 100 (147)	Well Graded Sand and Gravel with Some Clay (SW); Brownish Gray (5YR4/1); Wet; Very Dense	BG, 2 ppm, BG Dye Test - Neg.
_ 55	54-56	S11	.8	31-23 27-58 (50)	Same as S10	BG, 1 ppm, BG Dye Test - Neg.
_						Well Construction
_						Total Depth 54 Bent. 47-54 Sand 46-47 Screen 36-46 Sand 34-46 Bent. 32-34 Grout 0-32
						Screen is 10 Slot Screen & Riser 2" PVC

CLEAN TECH

N = Number Blows to Drive 2 "Spoon 24 "with 140 lb. Weight Falling 30 "Air Monitoring Data Shown as PID Readings in Breathing Zone, Borehole, and Split Spoon Sample Respectively.

chryb62.log

Project:	Chrysler Dayton Thermal Produ	icts	Boring Number	MWC1		
Location	Dayton, Ohio		Date Started	10/18/	94	
Client	Chrysler Corporation		Date Completed	10/25/	94	
Driller	Moody's of Dayton		Drilling Method	Cable	Tool	BE22-W
Elevation	745.00 ft MSL		Page Number	1	of	2
Water Lev	rel & Date 24.5 ft BGS	11/19/24	Logged By	News	om	

<u></u>	يتدا التجييس	Date		1.5 10	11/19/24 Logged By	Newsom
Depth BGS (ft)	Int- erval		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
10		NA.	NA	NA	Well Graded Gravel and Medium to	BG, BG, BG
		NA	NA	NA	Coarse Grain Sand (GW-SW); Trace fine sand, silt, and clay. No Odor or Sheen.	_ BG, BG, BG
_ 20		NA	NA	NA	Same as above	_ BG, BG, BG
_ 30		NA	ΝA	NA	Same as above	_ BG, BG, BG
_ 40		NA	AN	NA	Same as above	_ BG, BG, BG
_ 50		NA	NA	NA	Same as above	BG, BG, BG
- ⁶⁰		NA	NA	NA	Same as above	_ BG, BG, BG
70		NA	NA	NA	Same as above	_ BG, BG, BG
 - 76					Soft to Firm Gray Silt and Clay with Medium to Fine Grain Sand, Trace	Soft Clay 76 ft
					Gravel (CL); No Odor or Sheen.	Firm Clay 79 ft

CLEAN TECH

chrycll.log

Project	Chrysler D	ayton Thermal F	Boring Number	MWC1			
Location	Dayton, Oh	io		Date Started	10/18/94		
Client	Chrysler C	orporation		Date Completed	10/25	/94	
Driller	Moody's of	Dayton		Drilling Method	Cable	Tool	BE22-W
Elevation	745 ft MSL			Page Number	2	of	2
Water Lev	el & Date	24.5 ft BGS	Logged By		News	om	

Depth		Sample		SPT	Description: Name & USCS Group	Remarks
BGS (ft)	Int- erval	Type		Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency	Air Monitor Data Dye Test, WellCon
(± C /)	er var	ano.	(10)	(14)	Relative Density of Consistency	Dye rest, Wellcon
				<u> </u>		
80						
_	81-33	S1	1.0	NA	Silty Clay with Medium to Fine Grain	- BG, BG, BG
					Sand, Trace Gravel (CL); Medium to Light Gray (N5-N7)	
						_
90	83-96	NA	NA	NA	Same as S1, but with a Dark Oil Sheen in Bailed Water and Cuttings	- BG, BG, 5 ppm
1	_					
	96-98	S2	1.1	NA	Fine to Coarse Grain Sand with Silt, Trace Gravel (SW); Dark Gray (N7)	- BG, BG, 0.6 ppm
_ 100					<u> </u>	
	104	S 3	1.0	NA	Same as S2	 - Dye Test - Neg.
	106					
110	110-	S4	2.0	NA ·	Same as S3	- Dye Test - Neg.
_	112					
;						
						Well Construction
- }						Well Construction
						Total Depth 112 Screen 102-112
		į				Screen 102-112
	į					Bent. 96-100 Grout 0-96
						8" casing 0-82
	į					Riser 0-10:
						Screen is 10 Slo
- 						_Screen & Riser
						2″ PVC
ļ	ļ		,			Į.

CLEAN TECH

chryc12.log

Project	Chrysler Dayton Thermal P.	roducts	Boring Number	MWC2
Location	Dayton, Ohio		Date Started	10/18/94
Client	Chrysler Corporation		Date Completed	10/25/94
Driller	Moody's of Dayton		Drilling Method	Cable Tool BE22-W
Elevation	751.60 ft MSL		Page Number	1 of 3
Water Lev	el & Date 30.2 ft BGS	11/19/24	Logged By	Newsom

acci .	eve 8	x Date).2 ft 1	BGS 11/19/24 Logged By	Newsom
Depth BGS (ft)			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCor
_ 10		NA	NA	NA	Well Graded Gravel and Medium to Coarse Grain Sand (GW-SW); Trace Fine Sand, Silt, and Clay. No Odor or Sheen.	_ BG, BG, BG
_ 20		NA	NA	NA	Same as above	_ BG, BG, BG
_ 30		NA	NA	NA	Same as above	_ BG, BG, 3 ppm
_ 40		NA	NA	AN	Same as above	- BG, BG, BG
50		NA	NA	NA	Same as above	- BG, BG, BG
_ 60		NA	NA	NA	Same as above	- BG, BG, BG
_ 70	-	NA	NA	NA	Same as above	- BG, BG, BG

CLEAN TECH chryc21.log

Project	Chrysler Dayton Thermal Prod	ucts	Boring Number	MWC2		
Location	Dayton, Ohio		Date Started	10/18/	94	
Client	Chrysler Corporation		Date Completed	10/25,	/94	
Driller	Moody's of Dayton		Drilling Method	Cable	Tool	BE22-W
Elevation	751.60 ft MSL		Page Number	2	of	3
Water Lev	el & Date 24.5 ft BGS	11/19/94	Logged By	Nev	vsom	

Depth						Remarks Air Monitor Data		
BGS (ft)	Int- erval			Result (N)	Symbol, Color, Moisture Content, Relative Density or Consistency			or Data WellCon
- 80		NA	NA	NA	Same as above			
90	85-87	S1	1.0	NA	Silt and Clay with Trace Fine to Coarse Grain Sand (CL); Medium Gray (N5)	- BO	G, BG,	9 ppm
	37- 102	ΝA	AN	NA	Same as Sl with a Dark Oil Sheen in Bailed Water and Cuttings	- B(G, BG,	BG
_ 1.00								
	107- 109	S2	1.5	AN	Fine to Coarse Grain Sand, Silt, and Gravel, with Trace Clay (SW); Gray (N5)			BG t - Neg.
110	109- 114	NA	NA	NA	Same as S2; No Trace Clay	- B	G, BG,	BG
120	114- 116	s3	2.0	NA	Fine to Coarse Grain Sand and Silt with Trace Gravel and Clay (SW)		G, BG, ye Test	BG t - Neg.
120	116- 120	NA	NA	NA	Fine to Coarse Grain Sand, Silt, and Gravel (SW); Oil Sheen Noted in the Water and Cuttings	- B0	G, BG,	0.6 ppm
# 	120- 122	S4	2.0	NA	Same as S3		G, BG, ye Test	BG - Neg.

CLEAN TECH

chryc22.log

Project	Chrysler Dayton Thermal Proc	ducts	Boring Number	MWC2	
Location	Dayton, Ohio		Date Started	10/18/94	
Client	Chrysler Corporation		Date Completed	10/25/94	
Driller	Moody's of Dayton		Drilling Method	Cable Tool	BE22-W
Elevation	751.60 ft MSL		Page Number	3 of	3
Water Lev	el & Date 24.5 ft BGS	11/19/94	Logged By	Newsom	

	LEVEL C			2.0 10 1	11/15/54 Hogged By	Newson
	Int- erval		Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
	SIVAL	ano.			Vetactive pensity of Conststency	Well Construction Total Depth 122 Screen 112-122 Sand 110-122 Bent. 108-110 Grout 0-108 12" casing 0-75 8" casing 0-92 6" casing 0-93 Riser 0-112 Screen is 10 Slot Screen & Riser 2" PVC
 <u> </u>	 	 				<u> </u>

CLEAN TECH chryc23.log

Project	Chrysler D	ayton Thermal	Products	Boring Number	MWC3		
Location	Dayton, Oh	io		Date Started	11/9/94		
Claent	Chrysler C	crporation		Date Completed _	11/17/9	4	
Driller	Moody's of	Dayton		Drilling Method	Cable T	ool	BE22-W
Elevation	752.15 ft	MSL		Page Number	1	of	2
Water Lev	el & Date	26.8 ft BGS	11/19/24	Logged By	Newsom		

			· · · · ·					
Depth BGS		Sample		SPT	Description: Name & USCS Group	7:-		arks
(ft)	erval			(N)	Symbol, Color, Moisture Content, Relative Density or Consistency			or Data WellCon
L (1 C)	GIVAI	ano.	(10)	(14)	Moracive Density of Consistency	Dye	1636,	HETTCOIL
Ï								
Ĭ								
10		NA	NA.	NA	Well Graded Gravel and Fine to	Bo	G, BG,	BG
					Coarse Grain Sand with Silt (GW-SW);	- "	-,,	20
Ĭ					No Odor or Sheen.			
H								
20	19	NA	NA	NA	Silty Clay with Sand and Gravel(CL);	l Bo	5. BG.	BG
- ~					Medium Dark Gray (N4); Dark Brown	- ~`	_,,	
					Oil Sheen in Bailed Water & Cuttings			
	26	NA.	NA.	NA	Wall Craded Cravel with Fine to	 _ D/	G, BG,	P.C
30	26 	NA	NA	NA	Well Graded Gravel with Fine to Coarse Grain Sand with Silt (GW);		3, DG,	ьG
- "					No Odor or Sheen.	!		
<u> </u>								
40		NA	NA	NA	Same as above	l I⊸ Ro	a. BG.	0.4 ppm
- "		1177	1412	474.1			-, 20,	J PP.
			-					
50								
- 30								
	57-59	S1	2.0	NA	Silt and Clay with Trace Fine Grain	- во	G, BG,	BG
					Sand (CL); Medium Gray (N5); No Odor			
 60					or Sheen.			
- "	59-69	NA	NA	NA	Same as S1	В	G, BG,	BG
						_		
70	70-72	s2	1.5	NT Z	Fine to Coarse Grain Sand and Gravel			
- ' ⁰	10-12	32	1.5	IAU	with Silt and Trace Clay (SW);	-		
Ì						- BO	G, BG,	BG
<u>"</u>	 					l 		

CLEAN TECH chryc31.log

Project	Chrysler Dayton Thermal Pro-	Boring Number	MWC3		
Location	Dayton, Ohio		Date Started	11/9/94	
Client	Chrysler Corporation		Date Completed	11/17/94	
Driller	Moody's of Dayton		Drilling Method	Cable Tool BE22-W	
Elevation	752.15 ft MSL		Page Number	2 of 2	
Water Lev	el & Date 26.8 ft BGS	11/19/94	Logged By	Newsom	

Depth EGS (ft)			Rec.	SPT Result (N)	Description: Name & USCS Group Symbol, Color, Moisture Content, Relative Density or Consistency	Remarks Air Monitor Data Dye Test, WellCon
75	72-76	NA	NA	NA	Same as S2	BG, BG, BG - Dye Test - Neg.
- /5	76-78	s3	2.0	NA	Same as S2	BG, BG, BG - Dye Test - Neg.
_ 80	78-32	NA	NA	NA	Well Graded Gravel and Medium to Coarse Grain Sand, Silt, and Trace Clay (GW); Medium Gray (N5); No Odor or Sheen.	BG, BG, BG Dye Test - Neg.
_	82-34	S4	2.0	NA	Fine to Coarse Grain Sand and Gravel with Silt and Trace Clay (SW); Medium Gray (N5); No Odor or Sheen.	- BG, BG, BG Dye Test - Neg.
- !						Well Construction Total Depth 84 Screen 74-84 Sand 72-84
- !						Bent. 69-72 Grout 0-69 12" casing 0-57 8" casing 0-58. Riser 0-74
-						Screen is 10 Slot Screen & Riser 2" PVC
-						

CLEAN TECH chryc32.log

ATTACHMENT L

Groundwater Sample Collection Procedures
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

General Procedures for Groundwater Sampling Chrysler Corporation

Dayton Thermal Products Plant

- The well cover was unlocked and carefully removed to avoid introducing
 foreign material into the well. The well was immediately monitored for
 organic vapors during the first groundwater sampling round using a PID.
 Wells having PID readings above the ambient air background level were
 allowed to vent until levels reached background before proceeding with
 purging;
- The static water level (SWL) was determined using an interface probe.

 The presence of any LNAPL was determined. The SWL was recorded from a reference point on the PVC well casings;
- The well depth was obtained from well construction records and confirmed by lowering the interface probe to the bottom of the well. The presence of any DNAPL was determined. The total depth of the well from the reference point was recorded. Water level data was collected from all the wells during as short a time period as possible to minimize the effects of short term water level fluctuations;
- The volume of water in the well was calculated based on the water level measurements below top of casing, total well depth, and the well diameter;
- The well was purged using an air bladder pump. Materials of construction were Teflon or stainless steel, suitable for collection of samples for VOC and metals analysis. Three wellbore volumes of water were removed from the well and containerized near the well in preparation for disposal. Temperature, pH, dissolved oxygen and conductivity were measured following the removal of three consecutive well volumes of water. All information collected during well purging and sampling was recorded;

- Groundwater samples were collected following the completion of well purging. Well sampling was performed using the air bladder pump. Samples were collected into appropriate containers supplied and prepared by the laboratory performing the analyses. Sample bottles were filled directly from the pump discharge tubing. Dissolved metals analysis was performed using field filtered samples. A new 0.45 micron disposable filter was used for each sample;
- All sample bottles were labeled in the field using a waterproof permanent marker. The information on the labels included: site name, sample and project number, date/time, sampler's initials, preservatives added (if any), and analysis to be performed;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- The samples were shipped and received at the laboratory within EPA approved standard holding times for each analysis.

ATTACHMENT O

Quality Control Procedures for Groundwater Sampling
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Quality Control Procedures for Groundwater Samples Chrysler Corporation

Dayton Thermal Products Plant

- Sample collection was completed using new disposable latex gloves, new disposable filters, laboratory prepared glassware, and thorough decontamination of the sampling equipment. Decontamination of the equipment was accomplished by washing all sampler parts using a phosphate-free detergent followed by a potable water rinse. The equipment was then rinsed using deionized water and allowed to air dry;
- Samples were labeled to show site name, sample and project number, date/time, sampler's initials, preservatives added (if any), and analysis to be performed;
- Samples were placed on ice in coolers for transport to the analytical laboratory. Samples were logged using chain of custody documentation provided by the laboratory performing the analysis, Canton Analytical Laboratory, Inc. of Plymouth, Michigan. The samples were delivered by overnight courier to Canton Analytical Laboratory, Inc. under chain of custody control;
- One VOC and one metals duplicate were collected and analyzed;
- One equipment blank was collected and analyzed for VOCs;
- One trip blank was analyzed for VOCs;
- The samples were shipped and received at the laboratory within the EPA standard holding times for each analysis.

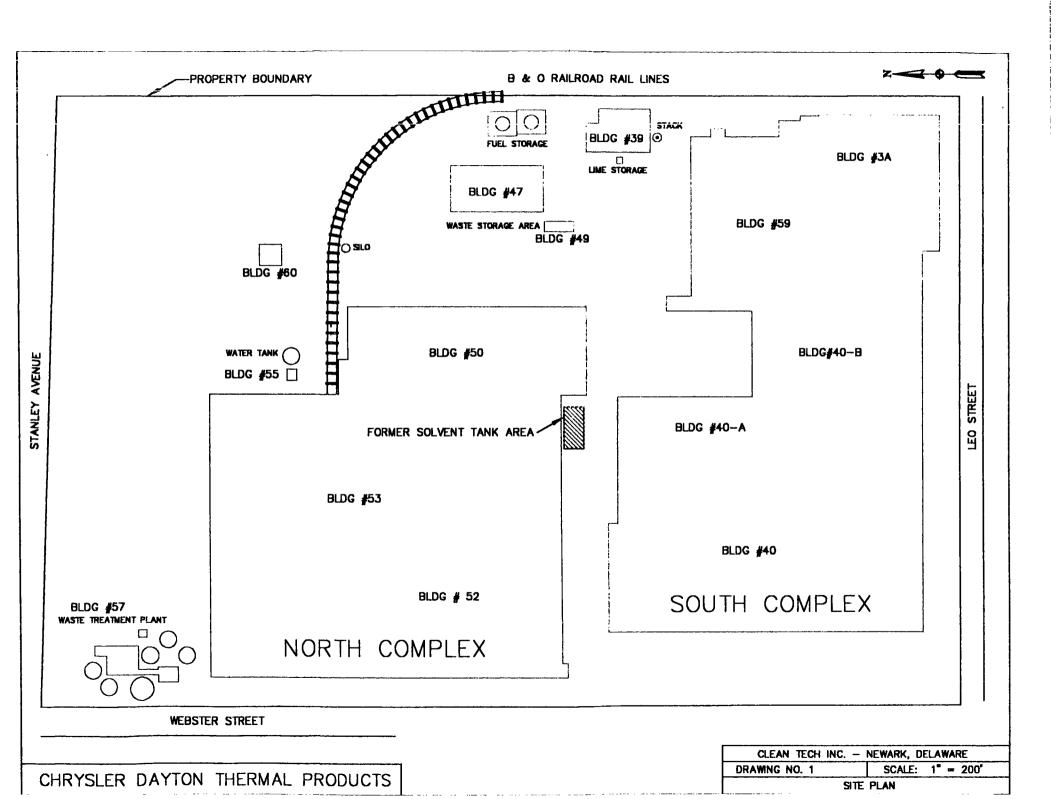
Site Plan

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404



Soil Vapor Survey
Sample Locations 1 Through 48
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Soil Vapor Survey

Total VOCs in Shallow Vadose Zone
Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

DRAWING 4 Soil Vapor Survey Total VOCs in Deep Vadose Zone Chrysler Corporation Dayton Thermal Products Plant 1600 Webster Street Dayton, Ohio 45404

Soil Vapor Survey
TCA in Shallow Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 6
Soil Vapor Survey
TCA in Deep Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Soil Vapor Survey
PCE in Shallow Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 8
Soil Vapor Survey
PCE in Deep Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 9
Soil Vapor Survey
Vinyl Chloride in Shallow Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 10
Soil Vapor Survey
Vinyl Chloride in Deep Vadose Zone
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 11
Soil Boring Locations
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 12 Groundwater Monitoring Well Locations Chrysler Corporation Dayton Thermal Products Plant 1600 Webster Street Dayton, Ohio 45404

DRAWING 13 Soil Sample Results - Total VOCs Chrysler Corporation Dayton Thermal Products Plant 1600 Webster Street Dayton, Ohio 45404

Soil Sample Results - Tetrachloroethylene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Soil Sample Results - Trichloroethene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Round #1 Groundwater Results - Total VOCs
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Round #1 Groundwater Results - Tetrachloroethylene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Round #1 Groundwater Results - Trichloroethene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Round #2 Groundwater Results - Total VOCs

Chrysler Corporation

Dayton Thermal Products Plant

1600 Webster Street

Dayton, Ohio 45404

Round #2 Groundwater Results - Tetrachloroethylene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Round 2 Groundwater Results - Trichloroethene
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Groundwater Elevation Unconfined Aquifer - December 1994
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Groundwater Elevation Unconfined Aquifer - January 1995
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Groundwater Elevation Unconfined Aquifer - February 1995
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

DRAWING 25 Geologic Cross-Section A-A' Chrysler Corporation Dayton Thermal Products Plant 1600 Webster Street Dayton, Ohio 45404

DRAWING 26
Geologic Cross-Section B-B'
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Geologic Cross-Section C-C'
Chrysler Corporation

Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

ATTACHMENT C

Soil Vapor Survey Results
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

Sample Number	Location	Depth (II)	1,1,1-Trichioroethane	Tetracitioroethene	Vinyi Chloride	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethane	1.1.2-1 richloroethane	1.1-Dichloroethane
40	21	10	331 67	37.37	47	ND	ND	ND	ND	ND
41	21	20	2568.24	222.09	ND	41 18	33.1	ND ND	ND ND	ND
42	22	10	2.21	11 17	. ND	ND	NŪ	ND	ND	ND
43	22	20	4.78	2017 65	ND	ND	33.29	ND	ND	ND
44	23	10	. ND	10 02	ND	ND	ND	ND	ND ND	ND
45	23	20	4.73	12.69	ND	ND	ND	17 97	ND ND	ND ND
46	24	10	ND	5.91	17.88	ND	- ND	ND	ND -	ND
47	24	20	· · · NA	. NA	NA NA	NA .	NA NA	ND	NA NA	ND ND
48	25	10	5.35	33 18	34.95	15.38	ND ND	ND ND	ND ND	ND ND
49	25	20	17.05	16.25	4.74	ND				
50	25 26	10	9.29	43.71	56.39	ND	ND	9.57	ND	ND
			92.73		4		ND	30.71	16.72	ND
51	26	20		18.85	16 24	ND	ND	ND	ND	ND
52	27	10	51.89	10.5	12.4	ND	ND	ND	10.09	ND
53	27	20	160.92	43.65	106.81	12.41	2.48	ND	35.94	ND
54	28	10	6.01	25.99	37.38	ND	ND	19.62	37.43	ND
55	28	20	ND	10.97	8.26	ND	ND	4.37	14.25	ND
56	29	10	7.66	12.93	46.55	ND	ND	25.83	17.56	ND
57	29	20	4.69	16.24	28.29	ND	ND	15.88	26.02	ND
58	30	7	ND	44.81	ND	ND	ND	ND	59.74	ND
59	31	7	ND	ND	ND	ND	101.87	ND	60.53	ND
61	33	10	NA	NA	NA NA	NA NA	NA NA	NA NA	NA NA	ND
62	33	20	2.79	5.96	19.02	ND	ND	10.25	5.66	ND
63	34	10	6.48	16.42	40.75	ND	ND	21.81	ND	ND
64	34	16	ND ND	18 51	11.31	ND	ND	ND	ND	ND
65	35	10	5.63	9.94	ND	ND	20.27	ND ND	ND ND	ND
66	35	20	ND	3.06	20.63	ND	ND ND	ND	ND ND	ND
67	36	10	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	ND
68	36	20	ND ND	13.65	32 25	ND ND	NA ND	NA ND	ND NA	ND ND
69	37	10	5.15	104.17		ND			ND ND	ND ND
	37		14.82		112.07		3.57	ND		
70	38	20 10		160.66	40.74	ND	7.1	ND	ND	ND
71			ND	4.53	ND	ND	ND	ND	15.88	ND
72	38	20	4.27	11.33	ND	ND	15,98	14.45	11.09	ND
73	39	10	31.49	43.53	ND	ND	ND	ND	ND	ND
74	39	20	225.91	81.05	15 91	ND	141.58	8.71	ND	ND
75	40	10	ND	2.86	ND	ND	ND	2.58	ND	ND
76	40_	20	ND	2.17	ND	ND	ND	ND	2.5	ND
77	41	10	5.33	8.94	ND	ND	ND	ND	ND	ND
78	41	20	ND	13 99	ND	ND	6.88	ND	ND	ND
79	42	10	ND	4.62	ND	ND	ND	ND	ND	ND
80	42	20	5.57	13.45	ND	ND	20.6	ND	ND	ND
81	43	10	2.64	19.44	ND	ND	10.28	ND	ND	ND
82	43	20	43.08	53.25	35.89	ND	2.55	ND	ND	ND
83	44	10	33.71	61.45	49.19	ND	ND	ND	ND	ND
84	44	20	116.95	103.7	29.92	ND	ND	ND	ND	ND
85	45	10	164.71	44.5	10.25	ND	ND	ND ND	ND	ND
86	45	20	1673.45	47.96	9.84	ND	ND ND	ND ND	ND	ND
87	46	10	4.4	6.99	36.53	ND ND	ND ND	ND ND	ND ND	ND
88	46	20	56.19	25.07	18 33	ND	3.74	ND ND	ND ND	ND ND
89	47	10	ND ND	ND	- 10 33	ND ND	3.74 ND	ND ND	ND ND	ND
90	47	20	34.23	9.09	41.92	ND ND	ND ND	ND ND	ND ND	ND ND
91	48	10	34.23 ND	5.24	14.82	ND ND		ND ND	ND ND	ND
92	48	20	No Sample Collected at		14.8∠	NU	ND	NU		
	40		No sample Collected at	; <u>2</u> 0			4		ļ	
		1				L	 	<u> </u>	<u> </u>	ļ
				l	Soil Vapor Surv	ey Dataset		Results are in Parts		
					March, 1995	1		Method Detection L	evel is 2.0 ppb	
					1	1		L	L	<u></u>
		1	1	1	1	,		1	i	1

ATTACHMENT D

General Procedures for Drilling and Soil Sampling
Chrysler Corporation
Dayton Thermal Products Plant
1600 Webster Street
Dayton, Ohio 45404

General Procedures for Drilling and Soil Sampling Chrysler Corporation

Dayton Thermal Products Plant

Drilling Procedures - Soil Borings

- The drill rig, augers, bits, and tools were steam cleaned prior to the start of
 each boring. All equipment contacting soil or groundwater was steam cleaned
 prior to commencing each borehole and after completion of the last borehole.
 No lubricants were used on drill rod or auger joints;
- Split spoon soil samples were collected starting at approximately four feet BGS. Sampling continued to the bottom of each borehole at five foot intervals. Individual soil samples were stored in sample jars and labeled with information on the location, depth, date, and blow counts. The samples were stored on-site. Disposable latex gloves were worn by field team members while handling soil samples;
- All field activities were performed in accordance with the Health and Safety Plan (HASP). Personal protection levels for field personnel were followed as stipulated in the HASP. Compliance with these levels was maintained through air monitoring as prescribed in the HASP;
- Drilling fluids and cuttings, and decontamination fluids were screened for organic vapor emissions using a photoionization detector. No organic vapor measurements were found which exceeded the action levels described in the HASP;
- All drilling was supervised by a qualified geologist. Supervision included maintaining a field activities log, preparation of stratigraphic logs, and any appropriate photographic documentation.

Soil Sampling Procedures - Soil Borings

- Soil samples were collected using a two-inch O.D. split spoon sampler;
- Following advancement of the augers to the sampling depth, the split spoon sampler was lowered to the top of the sampling interval on the drill rods;
- Four six-inch intervals were marked on the drill rods;
- Soil samples were collected using a standard penetration test. The number of blows was recorded as applied by a 140 pound weight falling thirty inches to drive the sampler for each six-inch interval. A total sampled thickness of 24 inches was recorded. The blow counts for the second six-inch interval and third six-inch interval were added and recorded as the standard penetration number;
- Each sample was then brought to the surface and opened. Photoionization detector measurements were made and recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. oil descriptions
 - used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample was tested using a hydrophobic dye for the presence of non-aqueous phase liquid. This was a qualitative screening test performed in the field at the time the sample was collected. The dye test would detect both light (LNAPL) and dense non-aqueous phase liquids (DNAPL) if present. The powdered dye, Sudan IV, was added to a slurry made from the soil sample and potable water. The slurry was then agitated by shaking the sample container. The dye would dissolve in the soil slurry if non-aqueous phase liquids were present in sufficient amounts, coloring the slurry a dark red. If non-aqueous phase liquids were not present, then the powdered dye would not dissolve in the slurry;

- Samples were stored in clean jars and labeled to show project, boring number, number of blows for advancing sampler, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site;
- The hollow stem auger equipped with a snug fitted steel stem plug was then advanced to the top of the next sample interval, the plug was removed and the above steps were repeated for the next sample;
- All boreholes were grouted to grade with a cement and bentonite mixture.

Drilling Procedures - Shallow Monitoring Wells

- The drill rigs, augers, bits, and tools were steam cleaned prior to the start of
 each boring. All equipment contacting soil or groundwater was steam
 cleaned prior to commencing each borehole and after completion of the last
 borehole. No lubricants were used on drill rod or auger joints;
- Split spoon soil samples were collected from the shallow wells starting at approximately four feet BGS and continued to the bottom of each borehole at five foot intervals. All soil samples were stored in sample jars and labeled with information on the location, depth, date, and blow counts. Blow counts were not recorded for those samples collected using the cable tool rig. The samples were stored on-site. Disposable latex gloves were worn by field team members while handling all split-spoon samples;
- All field activities were performed in accordance with the Health and Safety Plan (HASP). Personal protection levels for field personnel were followed as stipulated in the HASP. Compliance with these levels was maintained through air monitoring as prescribed in the HASP;

- Drilling fluids and cuttings, and decontamination fluids were screened for organic vapor emissions using a photoionization detector. No organic vapor measurements were found which exceeded the action levels as described in the HASP;
- All drilling was supervised by a qualified geologist. Supervision included maintaining a field activities log, preparation of stratigraphic logs, and any appropriate photographic documentation.

Soil Sampling Procedures - Shallow Monitoring Wells

- Soil samples were collected using a two-inch O.D. split spoon sampler;
- Following advancement of the augers to the sampling depth, the split spoon sampler was lowered to the top of the sampling interval on the drill rods;
- Four six-inch intervals were marked on the drill rods;
- Soil samples were collected using a standard penetration test. The number of blows was recorded as applied by a 140 pound weight falling thirty inches to drive the sampler for each six-inch interval. A total sampled thickness of 24 inches was recorded. The blow counts for the second six-inch interval and third six-inch interval were added and recorded as the standard penetration number;
- Each sample was then brought to the surface and opened. Photoionization detector measurements were made and recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. Soil descriptions used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample was tested using a hydrophobic dye for the presence of nonaqueous phase liquid;

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- Samples were stored in clean jars and labeled to show project, boring number, number of blows for advancing sampler, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site;
- The hollow stem auger equipped with a snug fitted steel stem plug was then advanced to the top of the next sample interval, the plug was removed and the above steps were repeated for the next sample.

Soil Sampling Procedures - Deeper Monitoring Wells

- Soil samples were collected using a three-inch O.D. split spoon sampler attached to a set of downhole casing jars. Samples were collected for lithologic description only. No blow counts were recorded;
- Each sample was brought to the surface and opened. Photoionization detector measurements were recorded for each split spoon sample;
- Each soil sample was geologically logged and described. The length of soil sample collected was recorded. The composition, structure, consistency, moisture, color, and sample condition were described. Soil descriptions used the Unified Soil Classification System (USCS) classifications, and Munsell Chart color descriptions;
- Each soil sample from the semi-confined aquifer was tested using a hydrophobic dye for the presence of non-aqueous phase liquid;
- Samples were stored in clean jars and labeled to show project, boring number, depth interval, date, and sampler initials;
- The soil samples were placed in sequence, by depth, in a storage box with dividers between the jars to prevent breakage. Each box was labeled and retained on-site.

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#17

TABLE 1

DAYTON THERMAL PRODUCTS DAYTON, OHIO

OFFSITE GEOPROBE INVESTIGATION GROUND-WATER QUALITY DATA APRIL 1999

UNITS ARE IN MICROGRAMS PER LITER (ug/L)

BORING LOCATION AND DEPTH (FEET)	DATE SAMPLED	1,1,1-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE	1,2-DICHLOROETHANE	CHLOROFORM	CIS-1,2- DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2- DICHLOROETHENE	TRICHLOROETHENE	VINYL CHLORIDE
BO	A D	1 5	7:	7	1,2	5	55	2	F 5	<u>*</u>	5
GENERIC UNRI	ESTRICTED										
POTABLE USE	STANDARD	200	NE	7	5	NE	70	5	100	5	2
DP-14/20-22'	04/19/1999	26	49	< 5	< 5	< 5	150 D	< 5	13	650 D	16 A
DP-14/38-40'	04/19/1999	< 5	10	< 5	< 5	< 5	25	< 5	< 5	99	< 2
DP-15/17-19'	04/20/1999	6.3	< 5	< 5	< 5	< 5	82 D	22	< 5	730 D	< 2
DP-15/38-40'	04/20/1999	300 D	70	22	< 5	< 5	580 D	< 5	29	10000 D	320 D,A
DP-16/18-20'	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
DP-16/34-36'	04/20/1999	< 5	< 5	< 5	< 5	< 5	29	< 5	< 5	< 5	<2
DP-17/19-21'	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	22	< 2
DP-17/38-40'	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
DP-18/18-20'	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<2
DP-18/33.5-35.5'	04/20/1999	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	1200	< 20
DP-19/21-23'	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<2
DP-19/38-40'	04/20/1999	< 5	< 5	< 5	< 5	< 5	110	< 5	< 5	12	<2
DP-20/19-21'	04/20/1999	< 5	9.6	< 5	< 5	< 5	43	< 5	< 5	140	< 2
DP-20/38-40'	04/20/1999	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	960	< 20
DP-21/38-40'	04/21/1999	22	7.2	< 5	< 5	< 5	150	16	8.8	390 D	<2
DP-22/18.5-20.5'	04/21/1999	< 5	< 5	< 5	< 5	< 5	8.2	< 5	< 5	240 D	<2
DP-22/38-40'	04/21/1999	< 5	< 5	< 5	< 5	< 5	14	< 5	< 5	220 D	<2
DP-23/24-26'	04/21/1999	< 5	< 5	< 5	< 5	< 5	24	< 5	< 5	11	< 2
DP-23/38-40'	04/21/1999	22	8.4	< 5	6.8	< 5	99	< 5	7.5	490 D	5.7
DP-24/19-21'	04/21/1999	< 5	< 5	< 5	< 5	6.9	< 5	< 5	< 5	60	<2
DP-24/35-37'	04/21/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	2.4
DP-25/19-21'	04/21/1999	< 5	< 5	< 5	< 5	< 5	8.3	< 5	< 5	820 D	< 2
DP-25/38-40'	04/21/1999	6.2 J	< 50	< 50	< 50	< 50	7.4 J	< 50	< 50	1400	< 20
DP-27/23-25'	04/22/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
DP-27/38-40'	04/22/1999	< 5	6.4	< 5	< 5	< 5	71	< 5	< 5	73	< 2
DP-28/19-21'	04/22/1999	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	520	< 20
DP-28/38-40'	04/22/1999	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	1800 D	< 20
DP-29/21-23'	04/22/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9.9	< 2
DP-29/38-40'	04/22/1999	< 50	< 50	< 50	< 50	< 50	62	< 50	< 50	630	< 20
DP-30/20-22'	04/22/1999	< 50	< 50	< 50	< 50	< 50	220	< 50	< 50	1300 D	< 20
DP-30/38-40'	04/22/1999	34	15	< 5	< 5	< 5	40	< 5	< 5	340 D	< 2
DP-31/20-22'	04/22/1999	< 250		< 250	< 250	< 250	< 250	< 250	< 250	3600	< 100
DP-31/35-37'	04/22/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9.1	11
DP-32/19-21'	04/22/1999	< 50	< 50	< 50	< 50	< 50	68	< 50	< 50	450	< 20
DP-32/33-35'	04/22/1999	< 250	< 250		< 250	< 250	280	< 250	< 250	1800	< 100
DP-33/19-21'	04/22/1999	< 25	66	< 25	< 25	< 25	190	< 25	< 25	300	63
DP-33/38-40'	04/22/1999	< 5	< 5	< 5	< 5	< 5	30	< 5	11	140	28
DP-34/21-23'	04/22/1999	< 5	58	< 5	< 5	< 5	460 D	< 5	12	42	5100 D
DP-34/38-40'	04/22/1999	< 5	14	< 5	< 5	< 5	2000 D	6.8	22		
DP-35/17-19'	04/23/1999	9.4	< 5	< 5	< 5	< 5		< 5	< 5	5400 D	2300 D
DP-35/38-40'	04/23/1999	< 5	< 5	< 5	< 5	< 5	13	< 5		73	< 2
			_						< 5	< 5	< 2
DP-36/30-32'	04/23/1999	< 250	< 250		< 250	< 250	850	< 250	< 250	3000	< 100
DP-37/19-21'	04/23/1999	< 5	5.9	< 5	5.4	< 5	34	< 5	< 5	130 D	< 2
DP-37/38-40'	04/23/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
DP-38/20-22'	04/23/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	12	< 2
DP-38/34-36'	04/23/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2

TABLE 1

DAYTON THERMAL PRODUCTS DAYTON, OHIO

OFFSITE GEOPROBE INVESTIGATION GROUND-WATER QUALITY DATA APRIL 1999

UNITS ARE IN MICROGRAMS PER LITER (ug/L)

BORING LOCATION AND DEPTH (FEET)	DATE SAMPLED	1,1,1-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE	1,2-DICHLOROETHANE	CHLOROFORM	CIS-1,2- DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2- DICHLOROETHENE	TRICHLOROETHENE	VINYL CHLORIDE
	RESTRICTED E STANDARD	200	NE	7	5	NE	70	5	100	5	2
DP-39/38-40'	04/23/1999	< 500	< 500	< 500	< 500	< 500	910	< 500	< 500	11000 D	< 200
DP-40/21-23'	04/23/1999	< 250	< 250	< 250	< 250	< 250	720	< 250	< 250	2400	< 100
DP-40/38-40'	04/23/1999	< 250	< 250	< 250	< 250	< 250	900	< 250	< 250	3600	< 100
DP-41/38-40'	04/23/1999	< 25	< 25	< 25	< 25	< 25	160	30	< 25	500	< 10
DP-42/38-40'	04/23/1999	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	7000	< 200
E042099-18	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
E042299-30	04/22/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
EDP042199	04/21/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
EDP042399	04/23/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
T042099	04/20/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
T042299	04/22/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2
T042399	04/23/1999	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 2

<: LESS THAN

D: THE ANALYTE WAS QUANTIFIED AT A SECONDARY DILUTION FACTOR.

L: SAMPLE REPORTING LIMITS ELEVATED DUE TO MATRIX INTERFERENCE.

A: DENOTES LCS RECOVERY RESULT EXCEEDED UPPER CONTROL LIMIT.

J: PRESENT BELOW NOMINAL REPORTING LIMIT.

NE: VALUE NOT ESTABLISHED



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Х	Unscannable Material: Oversized or Format. Due to certain scanning equipment capability limitations, the document page(s) is not available in SDMS. The original document is available for viewing at the Superfund Records center. Specify Type of Document(s) / Comment
	MAP: CIS-1,2-DCE ISOCONCENTRATION CONTOURS ALONG GEOLOGIC CROSS SECTIONS E-E & F-F
	Other:

Imagery Insert Form

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x	Unscannable Material: Oversized or Format. Due to certain scanning equipment capability limitations, the document page(s) is not available in SDMS. The original document is available for viewing at the Superfund Records center. Specify Type of Document(s) / Comment
	MAP: VINYL CHLORIDE PLUME ISOCONCENTRATION CONTOURS ALONG GEOLOGIC CROSS-SECTIONS I-I & L-L
	Other:

Imagery Insert Form

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MAP: CIS-1,2-DCE ISOCONCENTRATION CONTOURS ALONG GREOLOGIC CROSS-SECTIONS I-I, J-J & K-K
Other:

Imagery Insert Form

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	Specify Type of Document(s) / Comment
х	Unscannable Material: Oversized X or Format. Due to certain scanning equipment capability limitations, the document page(s) is not available in SDMS. The original document is available for viewing at the Superfund Records center. Specify Type of Document(s) / Comment
[MAP: TCE CONCENTRATIONS (ug/L) IN INTERMEDIATE GROUNDWATER
	Other:
[

#25

To:

Joe Whitlock, DaimlerChrysler Corporation

From:

Ken Vogel, Leggette, Brashears & Graham, Inc. $\chi g \nu$

Subject: Dayton Thermal Products

Free-Phase Product Recovery and Collection

Date:

July 23, 1999

On June 28, 1999 you met with Kristin Yahnke from our St. Paul, MN office and discussed the possibility of temporarily collecting recovered free-phase product from beneath Building 40B into a waste oil sump also located in Building 40B. Currently, product thickness averages 0.4 feet in thickness in four Bldg. 40B wells. As a result, we are in the process of evaluating the feasibility and design of a potential product recovery system.

MEMORANDUM

In September 1998, samples were submitted for laboratory analysis of free-phase product in SVE-11D, oil/water in the Trade Waste Sump located in the southern drum storage area in Building 40B, and oil/water in the Waste Oil Sump located just west of the new presses in Building 40B (figure 1). Chromatographic analyses indicate that all three of these samples are consistent with a complex mixture of lubricating oil fractions with volatile and semi-volatile components typical of diesel #2 and heavier weight, residual fuel oil fractions.

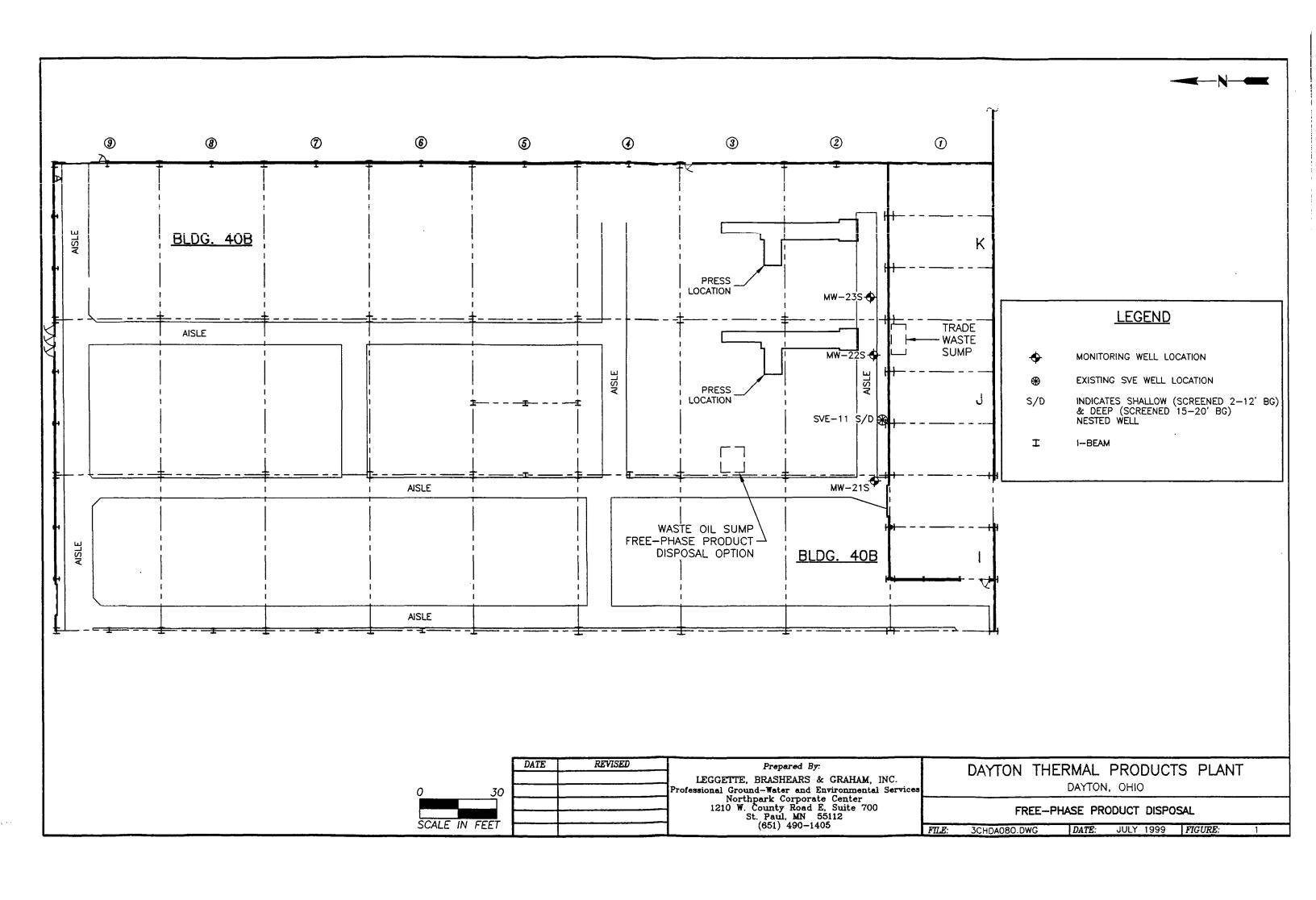
It is our understanding that the contents of the waste sumps are periodically collected for recycling by Waste Management. Since all three samples are similar in composition, we are interested in determining if DTPP and Waste Management will accept additional product recovered from the water table, and temporarily placed into existing infrastructure, for recycling also.

Attached are the analytical data along with a summary table for your evaluation regarding the option to collect the recovered free-phase product into the Waste Oil Sump. The samples have been identified in the laboratory report as "SVE-11 Grab Product Sample" (SVE-11D), "West Sump Grab Water Sample" (Waste Oil Sump), and "South Sump Grab Water Sample" (Trade Waste Sump). A verbal interpretation of the contents of each of the samples has been provided by the laboratory and is included in the laboratory report.

Placing collected free-phase oil in the Waste Oil Sump will eliminate the need to purchase, install, and permit an above ground storage tank which will be required for containing the recovered product if disposal to the sump is not an option. Please review the enclosed information and advise us as to DaimlerChrysler's position on this issue. Feel free to call me at (651) 490-1405 ext. 202 with comments or questions.

cc: Gary Stanczuk, DaimlerChrysler

SATECHA3CHRY/DAYTON/ENGINEER/MEMOS/07149910.WPD



DAYTON THERMAL PRODUCTS DAYTON, OHIO

FREE-PHASE PRODUCT ANALYSIS SVE-11D, WEST SUMP, AND SOUTH SUMP

UNITS ARE IN MICROGRAMS PER LITER (ug/L)

WELL	DATE	Total Hydrocarbons	PCB-1260	2-Methyt- naphthalene	Butylbenzyl- phthalate	bis(2- ethylhexyl)- phthalate	Phenol	2-methyl- phenol	3 & 4-methyl- phenol	2, 4-methyl- phenol	N-nitrosodi- phenylamine	Diesel #2 Fuel
OEPA VAP MCLs		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.5			6.0	9,400					
SVE-11D	15-Sep-98	2,300,000	1080 J	23,000 J	97,000 J	21,000 J	< 100,000					
WEST SUMP	15-Sep-98	< 2,000,000	< 1,000	< 5,000	< 5,000	25 J	54 J	22 J	42,000	33 J	38 J	710,000
SOUTH SUMP	15-Sep-98	< 2,000,000	< 1,000	< 1,000	< 1,000	< 1,000					< 1,000	5,500,000

NUMBERS IN BOLD WERE DETECTED ABOVE THE LABORATORY METHOD DETECTION LIMIT

J: ESTIMATED VALUE

SHADED NUMBERS EXCEED OFPA VAP MCLs

OEPA VAP MCLs: OHIO ENVIRONMENTAL PROTECTION AGENCY VOLUNTARY ACTION PROGRAM MAXIMUM CONTAMINANT LEVELS FOR GENERIC UNRESTRICTED

POTABLE USE STANDARDS, 1998 1st ADDITION

WEST SUMP: WASTE OIL SUMP SOUTH SUMP: TRADE WASTE SUMP

SVE-11D: WELL CONTAINING FREE-PHASE PRODUCT



Page: 1 of 22

LLI Sample No. G5 3001161 Collectes: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

SVE11 SDG#: LBG01-01

ANALYSIS NAME

CAT NO. Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON Rel.

AS RECEIVED

LIMIT OF RESULTS QUANTITATION UNITS

See Page 0174 PCBs in 0-1 Semivolatile Library Search See Page 11 0893 The results from the semivolatile library search are listed on the attached FORM 1F - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form. An "X" indicates an isomer of the listed

compound. App. IX Samivolatiles-Oil App. IX Samivolatiles con't App. IX Samivolatiles con't 4615 See Page See Page 5 4616 See Page 4617 6 App. IX Semivolatiles con't Solvent Identification Solvent Identification (cont.) Quantitative GC Fingerprint See Page 4618 See Page 0445 8 0466 See Page 10 See Page 2535

9188 2,300. 2,000. Total Hycrocarbons as n-Hexane The reported value for total hydrocarbons as n-hexane represents total volatile organic material detected by the solvent screen conditions for the range of C5 (n-pentane) through C10 (n-decane) normal hydrocarbons.

Leggette, Brashears & Graham MN ATTN: Mr. Ken Vogel 1 COPY TO I COPY TO Data Package Group

 $(a_i)^* = (-a_i^*)^* \cdot (a_i^*)^* \cdot (b_i^*)$

4 (44) 74 (74) 7505-0 **225** (74) 75 (74) 75 (75) 75 (75)

Questions? Contact your Client Services Representative Questions: Co... Kathy Klinefelter at (717) 656-2300 135779 632339 19:30:22 D 0002 0.00 00085100 ASR000 885

> Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

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Page: 2 of 22

LI,I Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul. MN 55112

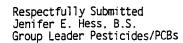
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PCBs in 0il 4815 PCB-1016 N.D. 2.500. ug/kg 4816 PCB-1221 N.D. 2.500. ug/kg 4817 PCB-1232 N.D. 2.500. ug/kg 4818 PCB-1242 N.D. 2.500. ug/kg 4819 PCB-1248 N.D. 2.500. ug/kg 4820 PCB-1254 N.D. 2.500. ug/kg	٦,	itti Joun.	LDGUI	-				AS RECI	EIVED	
4815 PCB·1016 N.D. 2.500. ug/kg 4816 PCB·1221 N.D. 2.500. ug/kg 4817 PCB·1232 N.D. 2.500. ug/kg 4818 PCB·1242 N.D. 2.500. ug/kg 4819 PCB·1248 N.D. 2.500. ug/kg 4820 PCB·1254 N.D. 2.500. ug/kg		ANAL YSIS	NAME					RESULTS		UNITS
4816 PCB-1221 N.D. 2.500. ug/kg 4817 PCB-1232 N.D. 2.500. ug/kg 4818 PCB-1242 N.D. 2.500. ug/kg 4819 PCB-1248 N.D. 2.500. ug/kg 4820 PCB-1254 N.D. 2.500. ug/kg	PCBs	in Oil								
4821 PCB-1260 ug/kg in the method blank associated	4816 4817 4818 4819	PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260	1360 vac	dotootod	-+	E700	ug/kg	N.D. N.D. N.D. N.D. N.D. 1,080. J	2.500. 2.500. 2.500. 2.500. 2.500. 2.500.	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg

Aroclor 1260 was detected at 5700 ug/kg in the method blank associated with this sample. The LCS/LCSD recoveries are above the QC limits. The sample was reextracted along with a second method blank that did not contain contamination, and LCS/LCSD that was within the acceptance limits. Since the hold time had expired prior to the second extraction, the results from the original analysis are reported. The result for 1260 from the second trial is 923 ug/kg, which confirms the original result and indicates that no contamination of the sample occurred.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



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Page: 3 of 22

LLI Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette.Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

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LIMIT OF **RESULTS** QUANTITATION UNITS

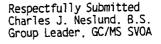
NO.	ANALYSIS NAME
App.	IX Semivolatiles-Oil

CAT

App.	IX Semivolatiles-Oil			
4668 3752 4666	pyridine N-nitrosodimethylamine 2-picolire	N.D. N.D. N.D.	100,000. 100,000. 100,000.	ug/kg ug/kg ug/ka
4657	N-nitrosomethylethylamine	N.D.	100,000.	ug/kg
4645 4655	methylmethanesulfonate N·nitrosod-ethylamine	N.D. N.D.	100,000. 100.000.	ug/kg ug/kg
4639	ethylmethanesul fonate	N.D.	100,000.	ug/kg
1185	pheno l	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
4622 3753	aniline bis(2.chloroethyl)ether	N.D.	100,000.	ug/kg
1186	2-chlorophenol	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
3754 1187	1.3-c:chlorobenzene 1.4-d:chlorobenzene	N.D.	100,000.	ug/kg
4623	benzyl alcohol	N.D. N.D.	250,000. 100,000.	ug/kg ug/kg
3755 4690	1,2-dichlorobenzene 2-methylphenol	N.D.	100,000.	ug/kg
3756	bis(2-chloroisopropyl)ether	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
4692 4660	3- and 4-methylphenol N-nitrosopyrrolidine	N.D.	100,000.	ug/kg
4619	acetophenone	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
4658 1188	N-nitrosomorpholine N-nitrosogi-n-propylamine	N.D.	100,000.	ug/kg
4674	o-toluidine	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
3757 3758	rexachloroethane ritrobenzene	N.D.	100,000.	ug/kg
4659 3759	N-nitrosopiperidine	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg
3746	isophorone 2-nitrophenol	N.D.	100,000.	ug/kg
	Aramite is not reported due to unavailab	ility of a suit	able standar	d.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

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Page: 4 of 22

LLI Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

SVE11 SDG#: LBG01-01

CAT

NO.

ANALYSIS NAME

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED

LIMIT OF

RESULTS QUANTITATION UNITS

App. IX Semivolatiles-0il

The QC limits for the following compounds are advisory only until sufficient data points can be obtained to calculate statistical limits:

1,3,5-Trinitrobenzene

1,4-Naphthalene

1.4-Phenylenediamine

2-Acetylaminofluorene Hexachlorophene

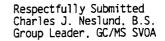
4-Nitroquinoline-1-oxide

5-Nitro-o-toluidine

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



er Loiter Elaboratories 2425 NAX - 1993 P. W. FD 8 5x 12425 3 327 07727 9 merten (14 17605-2475 100746-2306 (Fax 1007-656) 191



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Page: 5 of 22

LII Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by ∞

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

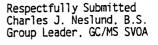
P.O. 3CHRY4/DAYTON

Rel.

		AS RECEIVED				
CAT			LIMIT OF			
NO.	ANALYSIS NAME	RESULTS	QUANTITATION	UNITS		
			•			
App.	IX Semivolatiles con't					
3747 3760	2.4-dimethylphenol bis(2-chloroethoxy)methane	N.D. N.D.	100,000. 100,000.	ug/kg ug/kg		
4676	0,0,0-triethylphosphorothioate	N.D.	100,000.	ug/kg		
3748	2,4-dichlorophenol	N.D.	100,000.	ug/kg		
1189	1,2,4-trichlorobenzene	N.D.	100,000.	ug/kg		
3761	naphthalene	N.D.	100,000.	ug/kg		
4631	2,6-dichlorophenol	N.D.	100,000.	ug/kg		
4693	4-chloroaniline	N.D.	100,000.	ug/kg		
4640	hexach1oropropene	N.D.	100,000.	ug/kg		
3762	hexachlorobutadiene	N.D.	100,000.	ug/kg		
4665	1.4-pheny enediamine	N.D.	2,000,000.	ug/kg		
4654	N-nitrosodi-n-butylamine	N.D.	100,000.	ug/kg		
1190	4-chloro-3-methylphenol	N.D.	100,000.	ug/kg		
4669	safrole	N.D.	100,000.	ug/kg		
4694	2-methylnaphthalene	23,000.	J 100,000.	ug/kg		
4670	1,2.4,5-tetrachlorobenzene	N.D.	100,000.	ug/kg		
3763	hexachlorocyclopentadiene	N.D.	200,000.	ug/kg		
3749	2,4.5-trichlorophenol	N.D.	100,000.	ug/kg		
4695	2.4.5-trichlorophenol	N.D.	100,000.	ug/kg		
4642	isosafrole	N.D.	100,000.	ug/kg		
3764	2-chloronaphthalene	N.D.	100,000.	ug/kg		
4696	2-nitroaniline	N.D.	100,000.	ug/kg		
4647	1,4-naphthoquinone	N.D.	200,000.	ug/kg		
3766	dimethylphthalate	N.D.	100,000.	ug/kg		
4637	1.3 dinitrobenzene	N.D.	100.000.	ug/kg		
3767	2.6-dinitrotoluene	N.D.	100,000.	ug/kg		
3750	2.4-dinitrophenol	N.D.	250,000.	ug/kg		

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter





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Page: 6 of 22

LLI Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

C:AT	VEII SUGH: LBGUI-UI	AS RECEIVED LIMIT OF			
NO.	ANALYSIS NAME		ANTITATION	UNITS	
App.	IX Semivolatiles con't				
3765 4697 1191 1192 4698 4662 1193 4649 4671 3770 3769 3763 4661 4700 3751 4677 4664 3773 4632 4632 4632 4632	acenaphthylene 3-nitroaniline acenaphthene 4-nitrophenol dibenzofuran pentachlorobenzene 2.4-dinitrotoluene 1-naphthylamine 2-naphthylamine 2-naphthylamine 2-naphthylamine 6-nitro-o-toluidine 6-ritro-o-toluidine 6-ritro-o-toluidine 6-ritrosodiphenylamine 6-dinitro-2-methylphenol 6-ritrosodiphenylamine 6-tetraethyldithiopyrophosphate 1,3,5-trinitrobenzene phenacetin 6-bromopnenylphenylether diallate (trans/cis) dimethoate 6-ritrosodiphenylamine decomposes in the 6-result reported for N-nitrosodipheny 6-ritrosodiphenylamine decomposes in the 6-result reported for N-nitrosodipheny	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	100,000. 100,000.	ug/kg ug/kg	

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300







Page: 7 of 22

LII Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

	VEII 2つ合併: LBG01-01	AS RECE		
CAT NC.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
App.	IX Semivolatiles con't			
App. 4621 1194 4667 46635 3776 3777 4653 4641 3778 1195 4635 3781 4635 3782 4635 3783 4635 3784 3788 4635 3788 4635 3788 3788 3789 3789 3791	4-aminobiphenyl pentachlorophenol pronamide pentachloronitrobenzene phenanthrene anthracene di-n-butylphthalate 4-nitroquinoline-1-oxide methapyrilene isodrin fluoranthene pyrene p-(dimethylamino)azobenzene chlorobenzilate 3,3'-dimethylbenzidine butylbenzylphthalate 2-acetylaminofluorene 3,3'-dichlorobenzidine benzo(a)anthracene bis(2-ethylhexyl)phthalate chrysene di-n-octylphthalate 7,12-dimethylbenz(a)anthracene benzo(b)fluoranthene benzo(b)fluoranthene benzo(a)pyrene 3-methylcholanthrene indeno(1,2 3-cd)pyrene dibenz(a,h)anthracene	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	250.000. 250.000. 250.000. 100.000. 100.000. 100.000. 250.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000. 100.000.	ugykkagggggggggggggggggggggggggggggggggg
4673	<pre>benzo(ghi)perylene thionazin Due to sample matrix, the GC/MS</pre>	N.D.	200,000.	ug/kg
	outside of QC limits.	Janitorauric Janitogate	, ccofci ics m	C. C

The usual quantitation limits could not be attained due to the matrix of the sample or interferences observed in the GC/MS semivolatile analysis.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA

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Page: 8 of 22

LLI Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by D0

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

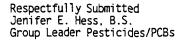
1210 County Rd. E W. Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

245	:11 SDG#: LBG01-01	AS REC		•
CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
So? ver	t Identification			
0854 0855 0856 0857 0858 0859 0860 0861 0862 1120 0863 1118 0864 0865 0866 0867 0868 0870 1119 0871 0872 0873 0874 0875 0876 0881 0881 0883 0883 0883	n-hexane n-heptare n-octane isooctane benzene toluene ethyl benzene xylenes styrene chlorobenzene methanol n-propanol ethanol isopropanol n-butanol isobutanol acetone methyl ethyl ketone methyl ethyl ketone cyclohexanone metnyl cellosolve ethyl cellosolve butyl cellosolve butyl cellosolve ethyl acetate procyl acetate isocropyl acetate n-butyl acetate ethyl ether carton tetrachloride chlcroforn metrylene chloride 1.1-dichloroethane 1.2-trichloroethane 1.1.2-trichloroethane	N.D.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.	0.050 0.050	**************************************
0837	trichloroethylene	N.D.	0.050	% by wt.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300











Page: 9 of 22

LLI Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by DO

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

SVE11 SDG#: LBG01-01

CAT NC. ANALYSIS NAME

Solvent Identification

0888 tetrachloroethylene 0889 Freon 113 1117 pyr dine Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112 P.O. 3CHRY4/DAYTON

Rel.

LIMIT OF
RESULTS QUANTITATION UNITS

AS RECEIVED

N.D. 0.050 % by wt. N.D. 0.050 % by wt. N.D. 0.050 % by wt.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



Lancaster Laboratories 2406 New His land Pille PO Box 12 425 Lancaster PA 17805-2425 117-656-2309 Fax 117-656-1361 Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs





Page: 10 of 22

LIJ Sample No. G5 3001161 Collected: 9/15/98 at 18:15 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

SVE11 SDG#: LBG01-01

CAT

NO. ANALYSIS NAME

Solvent Identification (cont.)

0853 n-pentane

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

Rel.

P.O. 3CHRY4/DAYTON

AS RECEIVED LIMIT OF RESULTS QUANTITATION UNITS

N.D.

0.050

% by wt.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



Cur naster Jebovatories 0.408 New Holland Rive 90.804 12425 Fancaster PA 17605-2405 0.456-0.505 New 01046501,633

Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

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EPA SAMPLE NO.

Page	11	of	22	1F				
-			SEMIVOLATILE	ORGANICS	ANALYSIS	DATA	SHEET	

SVE11 Lab Name: LANCASTER LABS Contract: _. SAS No.:

Lab Code: LANCAS Case No.: SDG No.: Lab Sample ID: 3001161 Matrix: (soil/water) SOIL
Sample wt/vol: 0 (g/mL) ML
Level: (low/med) LOW Lab File ID: >LJ269
Date Received: 09/17/98 Date Extracted: 10/09/98 Date Analyzed: 10/12/98 GPC Cleanup: (Y/N) N pH: Dilution Factor:

CONCENTRATION UNITS: Number TICs found: 50 (ug/L or ug/Kg) UG/L

! ! CAS NUMBER	! ! COMPOUND NAME	! ! RT	! ! EST. CONC.	. Q !
1.	!Unknown alkane	! 10.86	1500000.	i j i
į į.	!Unknown alkane	! 11.35	! 890000.	
3.	!Unknown alkane	! 11.65		i j i
4	!Unknown alkane	! 12.07		i ji
5.	!Unknown alkane	12.27		i j i
6	!Unknown	! 12.38	610000.	
7	!Unknown alkane	! 13.01		ijij
8.	!Unknown	! 13.54		įjį
9.	!Unknown cycloalkane	! 13.87		ijij
10.	!Unknown alkane	! 14.29		ijiji
11.	!Unknown alkane	14.42		i j i
12.	!Unknown alkane	14.99		ijiji
13	!Unknown alkane	15.22		i j i
14.	!Unknown alkane	16.30		ijij
15.	!Unknown alkane	16.82		! J !
16	!Unknown	17.88		! J !
17.	!Unknown	17.96		! J !
18.	!Unknown	! 18.31	2600000.	! J !
19.	!Unknown		139000000.	! J !
20.	!Unknown	19.28		! J !
21.	!Unknown alkane	19.53	1700000.	! J !
22.	!Unknown	19.82	880000.	! J !
. 23.	!Unknown	19.95		! J !
24.	!Unknown !	20.06 !	710000.	! J !
25.	!Unknown !	20.55 !	720000.	! J !
26.	!Unknown !	20.74 !	780000.	! J !
27.	!Unknown alkane !	21.14 !	910000.	! J !
28.	!Unknown	21.23 !	1000000.	! J ! ! J ! ! J ! ! J ! ! J ! ! J ! ! J !
29.	!Unknown !	21.44 !		! J !
30.	!Unknown !	21.59 !	1200000.	! J !
	!			!!
	FORM I SV-TIC		1.	/ 87 Re v.

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Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA









Fage	12 of			1F				EPA SAMPLE NO	0.
		SEMIVOLAT	ILE ORGANI	CS AN	ALYSIS DAT	A SHEE	Γ.		<u></u> :
1 - 6	None	LANCACTED	1.400		Comba	. .	!	SVE11	!
		LANCASTER		•	Contrac		^{c20} ;	n-	!
			Case No.:		SAS NO	.:			
Matr	^ix: (s	soil/water) SOIL					3001161	
Samp	ole wt/	vol:	0 (g/mL)	ML		Lab P	File ID: >	LJ269	
		low/med)				Date	Received:	09/17/98	
X Mo	oisture	e: not dec		dec.				: 10/09/98	
Extr	raction	n: (SepF/	Cont/Sonc)	•	SONC	Date	Analyzed:	10/12/98	
GPC	Cleanu	ιρ: (Ý/N) N	pH:		Dilut	tion Facto	r: 1.0	
		•		•	CONC	ENTRAT]	ION UNITS:		
Nun	mber T1	Cs found:	50				g/Kg) UG/L		

! CAS NUMBER	! ! COMPOUND NAME	! ! RT	EST. CONC.	! Q !
. 31.	!Unknown alkane	21.69	2200000.	J
! 32.	─!Unknown	! 21.88	! 690000.	! J !
! 33.	-!Unknown	! 22.00	! 1300000.	! J !
! 34.	-!Unknown alkane	! 22.36	2800000.	! J !
! 35.	-!Unknown	! 22.86	! 1000000.	! J ! ! J !
! 36.	T!Unknown alkane	! 23.14	. 6400000.	
! 37.	_!Unknown alkane	! 23.71 !	1100000.	! J !
! 38.	_!Unknown alkane	! 23.81	1100000.	! J !
! 39.	_!Unknown	! 24.10 !	600000.	! J !
! 40.	T!Unknown	! 24.18 !	640000.	! J ! ! J ! ! J !
! 41.	-!Unknown alkane	! 24.50 !	2200000.	! J !
! 42.	!Unknown alkane	! 24.59 !	2500000.	! J !
! 43.	_!Unknown alkane	! 25.05 !	660000.	! J !
! 44.	_!Unknown alkane	! 25.78 !		į j į
! 45.	-!Unknown	! 26.26 !		! J !
! 46.	-!Unknown alkane	! 26.93 !	780000.	! J ! ! J ! ! J ! ! J ! ! J !
! 47.	!Unknown alkane	! 27.34 !	1000000.	! J !
! 48.	_!Unknown	! 31.22 !	820000.	! J !
! 49.	-!Unknown	! 32.70 !	630000.	! J ! ! J !
! 50.	-!Unknown	! 37.34 !	660000.	! J !
!	_	!		!!
	FORM I SV-TIC		1	/87 Rev.

januare sagatoren jallita ili.

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA







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LLI Sample No. G5 3001161

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

ANALYSIS: 2535

The GC Fingerprint for this sample indicates a complex mixture of petroleum based and nonpetroleum organic materials. The overall sample fingerprint elutes throughout the range C10 (n-decane) through C40 (n-tetracontane) normal hydrocarbons and consists primarily of two distinct unresolved regions. The early eluting (more volatile) region elutes in the C10 - C20 (n-eicosane) range. This region is primarily unresolved; however, the overall pattern 's a fairly good match for our #2 fuel oil reference pattern. Additionally, a large single component peak, which is not present in the fuel reference pattern, elutes just prior to C14 (ntetradecane). This component accounts for approximately 10%, by weight, of the total organic content of the sample. The later eluting (less volatile) region elutes in the C20 - C40 range and is also unresolved. Each unresolved region (including the component peak in the C10 - C20 range) accounts for approximately 50%, by weight, of the total organic content of the sample. The unresolved nature of the two regions is typical of lubricating oil fractions analyzed by this method. However, the presence of fuel components indicates a complex mixture of lubricating oil fractions with volatile and semi-volatile components that are typical of diesel/#2 and heavier weight, residual fuel oil fractions.

For the purpose of quantitation, we base total area response of the sample pattern(s) on our #2 fuel oil reference standard response. When we calculate total sample area eluting in the C8 (n-octane) through C40 normal hydrocarbon range as petroleum distillate/product (#2 fuel oil), it is present at 76% by weight.

The GC Fingerprint for this sample was used as a reference fingerprint for LL 3001162 and 3001163.

The quantitation is presented on an as received basis. Consider it an approximation due to the differences between the sample pattern(s) and the reference patterns.

Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs



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LABORATORY CHRONICLE

Page: 14 of 22



LLI Sample No. G5 3001161 Collected: 09/15/98 at 18:15 by DO

Supmitted: 09/17/98

SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products SVE11 SDG#: LBG01-01

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

CA NO	ANALYSIS NAME	METHOD	TRIAL	 YSIS DATE AND TIME	ANALYST
0174 0815	PCBs in Oil Oil Sample PCB's Cleanup Ext.	SW-846 8082 SW-846 3580A	1	09/29/98 1343 09/26/98 0715	Rick Shober Deborah M. Zimmerman
4615 4616 4617	BNA Scil Extraction App. IX Semivolatiles-Oil App. IX Semivolatiles con't App. IX Semivolatiles con't App. IX Semivolatiles con't	SW-846 3550B SW-846 8270C SW-846 8270C SW-846 8270C SW-846 8270C	1 1 1 1		David J. Evans David J. Evans David J. Evans
0466 2535	Solvent Identification Solvent Identification (cont.) Quantitative GC Fingerprint Total Hydrocarbons as n-Hexane	SW-846 8015B modified SW-846 8015B modified SW-846 8015B modified SW-846 8015B	1 1 1	09/24/98 1320 09/24/98 1320 09/21/98 2213 09/24/98 1355	



QUALITY CONTROL REPORT

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LLI Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette, Brashears & Graham MN

	SAMPLE LOQ	SAMPLE UNITS	BL	ANK	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	LCS	LIMITS HIGH
	PCBs in Oil			82680010A									
481 2, 481	5 PCB-1016 500. u 6 PCB-1221	ig/kg	N.D.						143	136	5	36	136
481	7 PCB-1232	ıg/kg	N.D.										
2,5 481	500. 8 PCB-1242	ıg/kg	N.D.										
2.		g/kg	N.D.										
2.!	500. u 0 PCB-1254	g/kg	N.D.										
2,	50 0 . u	g/kg	N.D.										
482.	1 PCB-1260 500. u	g/kg	5,700.	ug/kg					133	127	5	51	124
4615 /	App. IX Semi	volatiles-0il	- Batch: 9	8282SDB026									
4668 100	8 pyridine ,0 0 0. u	g/kg dimethylamine	N.D.						21	21	1	34	92
100	,0 0 0. u	g/kg	N.D.						21	22	1	47	109
100	6 2 picolin .000 u	g/kg	N.D.						21	21	2	29	129
100	,000. u	methylethylamine g/kg	N.D.						26	27	5	78	128
100	,000. u	hanesul fonate g/kg	N.D.						42	41	1	66	122
100	,000. u	diethylamine g/kg	N.D.						21	22	5	37	135
100	,000. u	anesulfonate g/kg	N.D.						42	42	0	65	117
100	5 pheno1 .000. u	g/kg	N.D.						21	21	1	49	105
100	2 aniline ,0 <mark>0</mark> 0. u	g/kg	N.D.						20	20	1	30	97
100	,000. u	oroethyl)ether g/kg	N.D.						24	24	0	53	109
	6 2∙chlor⊃p ,000. u	henol g/kg	N.D.						21	21	1	55	107
	4 1,3-dichl .000 u	orobenzene g/kg	N.D.						21	21	1	53	103
	7 1,4-dichl ,000. u	orobenzene g/kg	N.D.						21	22	3	52	103
4623 250	3 benzyl al ,000. u	cohol g/kg	N.D.						22	22	2	62	115
	5 1.2-dichl	orobenzene g/kg	N.D.						21	22	3	56	107

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QUALITY CONTROL REPORT



Page: 16 of 2:

LLI Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

	SAMPLE LOQ	SAMPLE UNITS	BLANK	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	LCS LOW	LIMITS HIGH
100.	2-methy	ug/kg	N.D.					22	22	1	57	101
100,	000.	hloroisopropyl)ethe ug/kg	r N.D.					24	24	0	38	117
100,	000.	4-methylphenol ug/kg	N.D.				•	22	22	1	48	116
100,	000.	sopyrrolidine ug/kg	N.D.					20	20	2	77	113
100.0	acetoph 000.	ug/kg	N.D.					44	44	1	59	134
100,0	000.	somorpholine ug/kg sodi-n-propylamine	N.D.					22	22	2	78	109
100,0	000. o-tolui	ug/kg	N.D.					22	22	1	50	124
100,0	000.	ug/kg oroethane	N.D.					20	20	2	12	89
100,0		ug/kg	N.D.					21	22	1	52	108
100,0	000.	ug/kg sopiperidine	N.D.					41	41	0	56	110
100,0	isophore	ug/kg	N.D.					20	20	0	78	105
100,0	00. 2-nitro	ug/kg	N.D.					39	39	2	57	114
100,0	000.	ug/kg	N.D.					20	20	2	59	107
		mivolatiles con't	Batch: 98282SDB026									
100,0	00.	ethylphenol ug/kg	N.D.					21	21	1	39	108
100,0)30.	nloroethoxy)methane ug/kg	N.D.					21	21	2	56	103
100,0)))).	riethylphosphorothic ug/kg	N.D.					19	19	0	67	103
100,0)))).	nlorophenol ug/kg	N.D.					20	20	1	59	100
100,0	00.	richlorobenzene ug/kg	N.D.					20	20	2	57	104
100,0	naphthai 100.	ug/kg	N.D.					21	21	3	58	99
100,0	00.	nlorophenol ug/kg	N.D.					20	20	0	62	109
100,0		ug/kg	N.D.					21	21	3	1	102
100,0	00.	propropene ug/kg	N.D.					20	21	2	70	130
100,0	nekachi 00.	probutadiene ug/kg	N.D.					21	21	4	56	115



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22

QUALITY CONTROL REPORT



LII Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

	SAMPLE LOQ	SAMPLE UNITS	BLANK	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	FOM FC2	LIMITS HIGH	
		nylenediamine ug/kg	N.D.					23	23	0	70	130	
4654	⊦ N∙nitros	sodi-n-butylamine ug/kg	N.D.					21	20	1	75	103	
1190) 4-chlord	o-3-methylphenol	N.D.					20	21	1	56	108	
4669	safrole	ug/kg								_		•	
100, 4694	.000. 2-methyl	ug/kg napht:halene	N.D.					38	39	2	30	109	
100,	.0 0 0.	ug/kg tetrachlorobenzene	N.D.					20	21	2	60	102	
100,	000.	ug/kg	N.D.					21	22	3	61	113	
200.	0 0 0.	orocy:lopentadiene ug/kg	N.D.					13	9	30	27	113	
100,	0 0 0.	ichlorophenol ug/kg	N.D.					20	20	1	62	106	
100,	0 0 0.	richlorophenol ug/kg	N.D.					20	20	1	63	107	
	l isosafro COO.	ole ug/ka	N.D.					28	28	0	14	72	
3764	2-chlore	onaphthalene						21	21	2	60	106	
4696	000. 2-nitroa	ug/kç milire	N.D.										
100,	000.	ug/kç athoquinone	N.D.					22	21	1	54	111	
200,	000.	ug/kg	N.D.					19	20	1	70	130	
100,	dimethy 000.	ug/kg	N.D.					24	24	1	61	104	
4637 100	'_1,3-din⁻	trobenzene ug/kg	N.D.					37	38	1	61	109	
3767	′ 2,5-din ⁻	trotoluene						38	37	1	62	111	
3750	000. 2,4-dini	ug/kg trophenol	N.D.								_		
250.		ug/kg	N.D.					20	20	0	29	117	
4617 A	φp. IX Sem	nivolatiles con't	Batch: 98282SDB026										
100.		ug/kg	N.D.					21	21	1	62	101	
4697 100.	′3-nitroa 000	niline ug/kg	N.D.					18	18	0	9	110	
1191	. acenapht	hene	N.D.					21	21	0	61	100	
	4-nitrop	ug/kg henol											
	000. dibenzof	ug/kg `uran	N.D.					24	24	1	44	110	
100,	000.	ug/kg	N.D.					21	21	1	62	102	
4662 100,		orobenzene ug/kg	N.D.					21	21	0	6 9	100	

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QUALITY CONTROL REPORT

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LII Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

SAMPLE LOQ	SAMPLE UNITS	BLANK	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	LOW LOW	LIMITS HIGH
1193 2,4-dini 100,300.	trotoluene ug/kj	N.D.					39	39	0	58	113
4648 1 naphth 100,300.	ylamine ug/kg	N.D.					15	15	1	1	99
4649 2 · napht h		N.D.					10	10	0	1	100
4671 2,3,4,6	tetrachlorophenol ug/ka	N.D.					18	18	3	62	103
3770 diethylpl		N.D.					24	24	2	59	104
3769 4-chloro	ohenylphenylether						24	24	1	52	110
3768 fluorere	ug/kg 	N.D.							_		
100,000 u 4661 5-nitro-c	ug/kg o-toluidine	N.D.					21	21	2	59	109
	ug/kg	N.D.					13	13	3	70	130
100,000	ug/kg	N.D.					15	16	3	37	120
250,000. t	tro-2-methylphenol ug/kg	N.D.					18	18	2	42	107
3772 N-nitrose 100,000. i	odiphenylamine ug/kg	N.D.					20	20	1	60	106
	yldithiopyrophosphate ug/kg	N.D.					19	19	3	62	111
4677 1.3.5-tr		N.D.					44	45	2	70	130
4664 phenacet	in								2	69	105
3773 4-bromoph	ıg/kg nenylphenylether	N.D.					21	21			
100,000 i 4629 d'allate	ıg/kg (trans/cis)	N.D.					24	24	1	61	110
	ıg/kg	N.D.					22	22	1	69	126
100,000. t	ıg/kg	N.D.					17	17	0	23	79
3774 hexachlor 100,000. u	robenzen e ug/kg	N.D.					23	22	4	52	123
4618 App. IX Semi	ivolatiles con't	Batch: 98282SDB026									
	ig/kg	N.D.					6	5	6	1	46
1194 pentachlo 250,000. u	orophenol ug/kg	N.D.					22	22	1	42	108
4667 pronamide	2						11	11	0	1	132
4663 peintachlo		N.D.									
100,000. ι 3775 phenanthr	ig/kg rene	N.D.					32	41	24	68	115
	ıg/kg	N.D.					21	21	0	62	107



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LLI Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

SAMPLE LOQ	SAMPLE UNITS	BL AN K	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	LCS LOW	LIMITS HIGH
3776 anthracene	e g/kg	N.D.					21	21	1	62	105
3777 ci-n-buty		N.D.					24	24	1	59	114
4653 4-nitroqu	inoline-1-oxide	N.D.							_		
4643 methapyri							21	25	17	70	130
464 isodrin	g/kg	N.D.					20	19	3	35	138
200.000. ug 3778 fluoranthe	g/kg ene	N.D.					19	19	1	66	117
	g/kg	N.D.					20	20	0	58	110
100,000. ug	g/kg /lamino)azobenzene	N.D.					21	21	1	52	115
100,000. ug	g/kg	N.D.					23	24	3	1	186
4626 chlorobenz 100,000. ug	1/cq	N.D.					23	24	5	9	223
4635 3,3'-dimet 250,000. ug	J∕kg	N.D.					8	9	2	1	137
3780 butylbenzy	/lohthalate g/kg	N.D.					26	27	3	58	119
4620 2-acetylan	iinofluorene g/kg	N.D.					21	20	1	70	130
3783 3,3'-dich	orobenzidine	N.D.									
3781 benzo(a)an							17	17	1	15	94
3784 bis(2-ethy	g/kg Thexyl)phthalate	N.D.					21	21	2	63	106
100,000. ug 3782 chrysene	ı/kg	N.D.					25	26	2	8	158
	ı/kg rhthalate	N.D.					22	22	1	60	107
100,000. ug	/kg /kylbenz(a)anthracene	N.D.					23	24	3	54	127
100.000. uq	/ka	N.D.					36	36	1	99	213
	/kg	N.D.					20	21	3	59	105
3787 benzo(k)fl 100,000. ug	vka	N.D.					20	21	2	63	108
3788 benzo(a)py 100,000. ug	v'ka	N.D.					21	21	0	61	107
4644 3-methylch 100,000. ug	√kg	N.D.					38	39	3	58	169
3789 indeno(1,2 100,000. ug	/ka	N.D.					23	23	0	55	11.1
3790 dibenz(a,h)anthracene /kg	N.D.					23	24	5	60	117
3791 benzo(ghi)	perylene	N.D.								52	
100,000. ug	/kg	N.U.					23	23	1	52	113

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LCS RPD

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LCS

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Lancaster Laboratories A division of Thermo Analytical Inc.

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LCS LIMITS

HIGH

110

LOW

63

LLI Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

DUP

RPD

	SAMPLE LOQ	SAMPLE UNITS	BLANK
	-	/kg	N.D.
0445 S	olvent Ident		Batch: 982670002A
	n-hexare		
0855	0.050 % n-heptane		
0856	n octane	by wt.	
0857	isooctane	by wt.	
0858	0.050 % 1 benzene	•	
0859	toluene	by wt.	
0860	ethyl benze		
0861	xylenes	by wt.	
0862	styrene	by wt.	
1120	chlorobenze	oy wt. ene	
0863	methanol	by wt.	
1118	0.050	by wt.	
0864	0.050 % t ethanol	by wt.	
0865	0.050 % bisopropanol		
0866	0.050 % b	by wt.	
0867		by wt.	
0868		by wt.	
	0.050 % b	y wt.	
0869		y wt.	
0870	methyl isob	y wt.	
1119	cyclohexand	one by wt.	
0871	methyl cell 0.050 % b	osolve	
0872	ethyl cello	solve	

Wind the Line of the Control of the

0.050

% by wt.

3

OUALITY CONTROL REPORT

DUP



Page: 21 of 22

LCS LIMITS

LOW HIGH

LII Sample No. 3001161 SVE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette Brashears & Graham MN

MS

MSD

المراب والمناز والمرابع والمناز والمنا

DUP

RPD

SAMPLE SAMPLE L00 UNITS BLANK 0873 butyl cellosolve 0.050 * by wt. 0874 celloscive acetate 0.050 % by wt. 0875 ethyl acetate 0.050 ∦ by wt. 0876 propyl acetate 0.050 * by wt. isoprosyl acetate 0.050 * by wt. 0878 n butyl acetate 0.050 * by wt. 1116 ethyl ether % by wt. 0.050 0880 carbon tetrachloride 0.050 🕻 by wt. 0881 chloroform 0.050 % by wt. 0882 methylene chloride 0.050 * by wt. 0883 1.1-dichlorosthane 0.050 ≯ by wt. 1,2-dichloroethane 0.050 な by wt. 0885 1,1,1-trichloroethane 0.050 🏅 by wt. 0886 1,1,2-trichloroethane 0.050 * by wt. 0887 trichloroethylene 0.050 % by wt. 8880 tetrachloroethylene 0.050 > by wt. Freon 113 0.050 ∜ by wt. 1117 pyridine 0.050 % by wt. 0466 Solvent Identification (cont.) Batch: 982670002A

0853 n pentane

0.050 % by wt. 2535 Quantitative GC Fingerprint

attached

Batch: 982620000A J264

ak nakrer paporetories 1277-12-5 201273-4

- 17 (1997) - 17 (1997) - 17 (1997)





Page: 22 of 22

LLI Sample No. 3001161 SYE-11 Grab Product Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

		SURRUGATE SUM	MARY		
				Surroga'	TE LIMITS
	TRIAL ID	SURROGATE	RECOVERY *	LOW	HIGH
0174 PCBs in Oil		TCX DCB	97 80	32 42	139 133
2535 Quantitative GC Fingerprint		Chlorobenz o-terpheny	96 91	71 75	135 125
4615 App. IX Semivolatiles-Oil		Phenol-d6 2-Flphenol 2,4,6-TBP	101 108 131	39 35 23	108 108 125
4616 App. IX Semivolatiles con't		Nitrobz-d5 2-Fbiphnyl Tphenyld14	112 111 117	31 45 37	126 113 130

CURROCATE CURAMARY

)]

Earkauter lebonstörles 0405 fleichen lachd Fille 60 304 | 0485 0466 fleich 1605 4495 1404 fleich 1605 fleich 1654 (1651)



Page: 1 of 24

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON Rel.

AS RECEIVED CAT LIMIT OF NO. ANALYSIS NAME **RESULTS** QUANTITATION UNITS See Page 0173 PCBs in Water See Page 13 0893 Semivolatile Library Search The results from the semivolatile library search are listed on the attached FORM 1F - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form. An "X" indicates an isomer of the listed compound. App. IX Semivolatiles-Water App. IX Semi-volatiles con't 1309 See Page See Page 1310 App. IX Semi-volatiles con't App. IX Semi-volatiles con't Solvent Identification 1311 See Page 6 1312 See Page See Page 0445 9 See Page 0466 Solvent Identification (cont.) TPH by GC-FID in Water 4828 See Page 15 2,000. 9188 Total Hydrocarbons as n-Hexane N.D. The reported value for total hydrocarbons as n-hexane represents total volatile organic material detected by the solvent screen conditions for the range of C5 (n-pentane) through C10 (n-decane) normal hydrocarbons.

Leggette, Brashears & Graham MN ATTN: Mr. Ken Vogel 1 COPY TO 1 COPY TO Data Package Group

Questions? Contact your Client Services Representative at (717) 656-2300 135779 632339 Kathy Klinefelter 19:33:21 D 0002 0.00 00085400 ASR000 885

> Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

See over 100 more grant to of the incidence of the





Page: 2 of 24

LLI Sample No. WW 3001162 Co lected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chmysler - Dayton Thermal Products

WESTS SDG# LBG01-02

ANALYSIS NAME

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON Rel.

AS RECEIVED

LIMIT OF RESULTS QUANTITATION UNITS

PCBs in Water

CAT

NJ.

0639 0640 0641 0642 0643 0644	PCB - 1016 PCB - 1221 PCE - 1232 PCB - 1242 PCB - 1243 PCB - 1254			N.D. N.D. N.D. N.D. N.D.	1,000. 1,000. 1,000. 1,000. 1,000.	ug/l ug/l ug/l ug/l ug/l
0645	PCB - 1260			N.D.	1,000.	ug/1

Due to interfering peaks on the chromatogram, the values reported represent the lowest quantitation limits obtainable.

Descrite numerous cleanup methods, we were unable to reach our usual quantitation limits.

> Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter



san aste Capthatories 1011 Na 144 AMERICA 301 AMERICA

Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

Company of the property of the



3 of 24 Page:

LLI Sample No. WW 3001162 Co lected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products WESTS SDG#: LBG01-02

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

	1013 SDOT REGULTUR	AS I	RECEIVED	
CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
App.]X Semivolatiles-Water			
App. 3920 3913 1301 1292 1285 1291 1279 3918 0925 3867 3887 3888 3884 3865 3882 3877 1271 3878 1295 1267 1293 3915 1306 3902 39194 3904	pyridine N-nitrosodimethylamine 2-picoline N-nitrosorethylethylamine methylmethanesulfonate N-nitrosodiethylamine ethylmethanesulfonate phenol aniine bis(2-chloroethyl)ether 2-chlorophenol 1,3-dichlorobenzene 1,4-dichlorobenzene benzylalcohol 1,2-dichlorobenzene 2-methylphenol bis(2-chloroisopropyl)ether 3- and 4-methylphenol N-nitrosopyrrolidine acetophenone N-nitrosomorpholine N-nitrosodi-n-propylamine o-toluidine hexachloroethane nitrobenzene N-nitrosopiperidine isophorone	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	5,000. 5,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1
391.1	2-nitrophenol Aramite is not reported due	N.D. to unavailability of a	5,000. suitable standar	ug/1 d.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

1, 1, 1, 4 = 1, 13 (14) 1, 1, 1, 1, 1, 2, 1

- 1746 84 17605-2428 - 1867 1760 177656-2681

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA

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Page: 4 of 24

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

CAT

ANALYSIS NAME NO.

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED

LIMIT OF **RESULTS** QUANTITATION

UNITS

App. IX Semivolatiles-Water

The QC limits for the following compounds are advisory only until sufficient data points can be obtained to calculate statistical limits:

1.3.5-Trinitrobenzene 1.4-Naphthalene

1,4-Phenylenediamine

2-Acetylaminofluorene

Hexach lor ophene

4-Nitroquinoline-1-oxide

5-Nitro-o-toluidine

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



ar nu ten laburatoret 128 Nem ed and eve January 12 178 (547 175) Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA





Page: 5 of 24

LI.I Sample No. WW 3001162 Co lected: 9/15/98 at 18:00 by 00

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

3895

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700

UNITS

St. Paul, MN 55112

5,000.

ug/1

37.31.01

N.D.

AS RECEIVED

P.O. 3CHRY4/DAYTON

Rel.

LIMIT OF CAT NO. ANALYSIS NAME **RESULTS** QUANTITATION App. IX Sem -volatiles con't

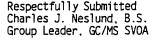
3890 2,4-dimethylphenol 33. J 100. ug/1 5,000. 5,000. bis(2-chloroethoxy)methane N.D. ug/1 3865 0.0,0-triethylphosphorothioate ug/1 1307 N.D. ug/1 5,000. 3886 2,4-dichiorophenol N.D. 3921 1.2.4-tricilorobenzene N.D. 5,000. ug/1 3906 naphthalene N.D. 5,000. ug/1 1273 5,000. ug/1 2,6-dichlorophenol N.D. 3871 4-chloroaniline ug/1 N.D. 5,000. 1281 5,000. hexachloropropene N.D. ug/l 3900 hexachlorobutadiene N.D. 5,000. ug/1 1300 1290 100,000. 1.4-phenylenediamine ug/1 N.D. 5,000. ug/1 N-nitrosod -n-butylamine N.D. 3872 1303 5,000. 5,000. 4-chipro-3-methylphenol N.D. ug/1 ug/1 safrole N.D. 2-methylnaphthalene 3905 N.D. 5,000. ug/1 1304 1,2,4,5-tetrachlorobenzene 5,000. ug/1 N.D. 13,000. 3901 hexachlorocyclopentadiene N.D. ug/1 3923 3922 5,000. 2.4.6 trichlorophenol N.D. ug/1 2.4.5 trichlorophenol 5,000. ug/1 N.D. 5,000. 5,000. 1283 isosafrole N.D. ug/1 3873 ug/1 N.D. 2-chloronaphthalene 3907 2-nitroaniline N.D. 5,000. ug/1 1286 N.D. 50,000. 1,4-naphthoquinone ug/l 5,000. 3891 dimetrylphtralate N.D. ug/1 ug/1 5,000. 1278 1.,3-dinitropenzene 2.6-dinitropoluene N.D.

> Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

> > turi in ara file ana ara

9 44 (11665-0475 1900 - 1900 1179-156-0670





6.36599.0055





Page: 6 of 24

LI,I Sample No. WW 3001162 Co lected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

WESTS SDG#: LBG01-02	AS RE	ECEIVED	
CAT NO. ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
App. 1X Semi-volatiles con't			
3858 acenaphthylene 3908 3-nitroaniline 3857 acenaphthene 3893 2,4-dinitrophenol 3912 4-nitrophenol 3879 dibenzofuran 1297 pentachlorobenzene 3894 2,4-dinitrotoluene 1287 1-naphthylamine 1288 2-naphthylamine 1288 2-naphthylamine 1288 2.3,4,6-Tetrachlorophenol 3887 diethylphthalate 3875 4-chlorophenylphenylether 1898 fluorene 1296 5-nitro-o-toluidine 3909 4-nitroaniline 3892 4,6-dinitro-2-methylphenol 3914 N-nitrosodiphenylamine 1305 tetraethyldithiopyrophosphate 1308 1,3,5-trinitrobenzene 1299 phenacetin 3869 4-bromophenylphenylether 1313 diallate (trans/cis) 1274 dimethoate 8899 hexachlorobenzene N-nitrosodiphenylamine decomposes in the G The result reported for N-nitrosodiphenyla total of both compounds.	N.D. N.D. N.D. N.D. N.D. N.D. N.D. C inlet fo	5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 13,000. 5,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

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Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA

Here are the compared to the compared starts.



Page: 7 of 24

LII Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products
WESTS SDG# - BG01-02

Account No: 10108

Leggette, Brashears & Graham MN

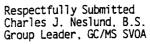
1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

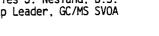
Rel.

	ESTS SDG#: LBG01-02	AS REC	EIVED LIMIT OF	
CAT NO.	ANALYSIS NAME	RESULTS	QUANTITATION	UNITS
App.	IX Semi-volatiles con't			
1259 1302 1298 3917 3859 3880 1289 3368 1287 3919 1277 3870 12885 3868 3868 1277 3868 3868 3868 1288 3868 3868 3868 3868 3868 3868 3868 3	4-aminobiphenyl pentachlorophenol pronamide pentachloronitrobenzene phenanthrene anthracene di-n-butylphthalate 4-nitroquinoline-1-oxide methapyrilene isodrin fluoranthene pyrene p-(dimethylamino)azobenzene chlorobenzilate 3,3'-dimethylbenzidine butylbenzylphthalate 2-acetylarinofluorene 3,3'-dich'orobenzidine benzo(a)anthracene bis(2-ethylhexyl)phthalate chrysene di-n-octylphthalate 7,12-dimethylbenz(a)anthracene benzo(b)fluoranthene benzo(b)fluoranthene benzo(a)pyrene 3-methylcholanthrene indeno(1,2,3-cd)pyrene dibenz(a,h)anthracene benzo(ghi)perylene thionazin	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	5,000. 13,000. 5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 5,000. 10,000. 13,000. 5,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1
•				-

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300 Kathy Klinefelter









Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700



Page: 8 of 24

P.O. 3CHRY4/DAYTON

Rel.

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

CAT

NO. ANALYSIS NAME AS RECEIVED

LIMIT OF

RESULTS QUANTITATION UNITS

Account No: 10108

St. Paul, MN 55112

App. IX Semi-volatiles con't

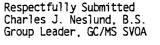
Due to insufficient sample, the quantitation limits for the GC/MS semivolatile compounds were raised.

The usual quantitation limits could not be attained due to the matrix of the sample or interferences observed in the GC/MS semivolatile analysis.

Batch QC was not extracted with this sample.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

Ster Ladoratine<mark>s</mark> 2425 New Holland Hills HOLBUR 12425 Janes 184 17608-2475 enaldere in Tiblige trat



General experience of the parameters of the many conditions and the parameters of the





Page: 9 of 24

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

WESTS SDG#: LBG01-02 AS RECEIVED CAT LIMIT OF NO. ANALYSIS NAME RESULTS QUANTITATION UNITS Solvent Identification 0854 n-hexane N.D. 0.050 % by wt. 0855 n-haptane 0.050 N.D. % by wt. % by wt. 0856 n-octane N.D. 0.050 0857 % by wt. isocctane 0.050 N.D. 0858 0.050 benzene N.D. % by wt. 0859 0.050 % by wt. tollene N.D. 0860 ethyl benzene N.D. 0.050 % by wt. 0861 xylenes N.D. 0.050 % by wt. 0862 styrene 0.050 N.D. % by wt. 1120 chlorobenzene N.D. 0.050 % by wt. 0853 methanol N.D. 0.050 * by wt. 1118 n-propanol N.D. 0.050 % by wt. 0854 ethanol 0.050 % by wt. N.D. 0855 isopropanol N.D. 0.050 % by wt. 0856 n-butanol N.D. 0.050 % by wt. 0857 0.050 isobutanc1 N.D. % by wt. 0868 acetione N.D. 0.050 % by wt. 0869 0.050 methyl ethyl ketone % by wt. N.D. 0870 methyl isobutyl ketone N.D. 0.050 % by wt. 1119 cyc ohexanone N.D. 0.050 * by wt. 0871 methyl cellosolve N.D. 0.050 % by wt. 0872 etryl cellosolve N.D. 0.050 % by wt. 0873 butyl cellosolve N.D. 0.050 % by wt. 0874 cellosolve acetate N.D. 0.050 % by wt. 0875 ethyl acetate % by wt.

> Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

N.D.

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

0.050

44 H = 55 (\$2.55)

% by wt.

¼ by wt.

% by wt.

% by wt.

% by wt.

% by wt.

% by wt.

* by wt.

% by wt.

% by wt.

% by wt.

% by wt.

. . .



0876

0877

0878

1116

0830

0881

0882

0883

0884

0885

0886

0887

propyl acetate

ethyl ether

chloroform

isopropyl acetate n-butyl acetate

carbon tetrachloride

methylene chloride

1,1-dichloroethane

tr:chloroethylene

1.2-dich oroethane
1.1.1-tr chloroethane

1,...2-tr chloroethane

deliter Lungii morres 1,000,450,000,000 2425 uncerter PA 17505-2425 (1774-1947) | 5-4 | 715 | 656 | 6-51 Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

Algorithms and





Page: 10 of 24

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

CAT NO.

ANALYSIS NAME

Sclvent Identification

8880 0889 1117

tetrachlcroethylene Freon 113 pyridine

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED LIMIT OF **RESULTS** QUANTITATION UNITS

N.D. 0.050 % by wt. % by wt. % by wt. N.D. 0.050 N.D. 0.050

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



Lam Guren Lab Martin es Lam Aufer (a) (in a 10 le) 0.426 (Aever Hid and Fille) 40.65 (10 le) 466 (354 FILE) (174 (5-240) 10 (146 4) (350) Respectfully Submitted Jenifer E. Hess. B.S. Group Leader Pesticides/PCBs

See level existent in the language ships from the language level





Page: 11 of 24

LI.I Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products WESTS SDG#: LBG01-02

CAT NO.

ANALYSIS NAME

Solvert Identification (cont.)

0853 n-pentane

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED

LIMIT OF **RESULTS**

QUANTITATION

UNITS

N.D.

0.050

% by wt.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



Lai caster unboratories 1925 New Holland Phie 90 Bux 10 425 | shaaster FA 10605+3435 | 107-605-3301 | 547-107-535-3681 Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

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P.O. 3CHRY4/DAYTON

Rel.



Page: 12 of 24

LLI Sample No. WW 3001162 Collected: 9/15/98 at 18:00 by 00

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

WESTS SDG#: LBG01-02

ANALYSIS NAME

AS RECEIVED

LIMIT OF **RESULTS** QUANTITATION UNITS

Account No: 10108

St. Paul, MN 55112

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700

TPH by GC-FID in Water

NC.

4829 N.D. 40. Gasc ine mg/1 4830 Kerosene N.D. 40. mg/1

40. 4831 Diesel/#2 Fuel 710. mg/1The quantitation limits were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.

See attached fingerprint comment.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

MEMBER

or is nervacoratories 0125 Nev Hr Grithie 60 614 | 2420 (\$10544) 74 \$7605-2475 111 156 1211 544 111-6564 56 Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: LANCASTER LABS
Lab Code: LANCAS Case No.:

Matrix: (soil/water) WATER
Sample wt/vol: 500 (g/mL) ML
Lab File ID: >LJ270
Level: (low/med) LOW

MeSTS

Lab Sample ID: 3001162
Lab File ID: >LJ270
Date Received: 09/17/98

Moisture: not dec dec Date Extracted: 10/09/98

Number TICs found: 48 (ug/L or ug/Kg) UG/L

! CAS NUMBER	! COMPOUND NAME	! ! RT	EST. CONC.	! Q !
! 1.	! COMPOUND NAME !Unknown !Unknown carboxylic acid !Unknown !Unknown carboxylic acid !Unknown	RT	EST. CONC. 4000. 340. 1200. 260. 550. 210. 310. 300. 5700. 270. 260. 780. 1000. 1000. 1800. 46000. 4500. 330. 3600. 280. 240. 280. 240. 230. 200.	
! 27	!Unknown alkane !Unknown !	24.57 ! ! 26.99 !	260. ! 420. !	j i J i

FORM I SV-TIC 1/87 Rev.

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA







Page 14	4 of	24 1 SEMIVOLATILE ORGANIC	•	SHEET	EPA SAMPLE NO.
		SEMITOLATILE GRANIC	S ANALISIS DAIA)	WESTS
Lab Na	ame:	LANCASTER LABS	Contract		!
		LANCAS Case No.:	SAS No.:	: SDG	
		soil/water) WATER		Lab Sample ID:	
Sample	e wt/	/vol: 500 (g/mL)	ML	Lab File ID: >	LJ270
Level	: (low/med) LOW		Date Received:	09/17/98
% Mois	sture	e: not dec de	ec	Date Extracted	: 10/09/98
		n: (SepF/Cont/Sonc)		Date Analyzed:	
			pH: .	Dilution Facto	
		·	CONCE	NTRATION UNITS:	
Numbe	er TI	Cs found: 48	(ug/L	or ug/Kg) UG/L	

! CAS NUMBER	! COMPOUND NAME	! ! RT	EST. CONC.	Q
29.	!Unknown	27.35	240.	i j i
! 30.	!Unknown alkane	! 27.68	260.	! J !
! 31.	!Unknown alkane	27.96	360.	! J !
! 32.	!Unknown alkane	! 29.15	260.	! J ! ! J !
! 33.	!Unknown alkane	! 30.00	260.	! J !
! 34.	!Unknown	! 30.50	220.	! J ! ! J !
! 35.	-!Unknown	! 31.21	530.	! J !
! 36.	!Unknown	! 31.93	240.	! J ! ! J !
! 37.	!Unknown	! 32.16	410.	! J !
! 38.	!Unknown	! 32.72	470.	! J !
! 39.	!Unknown	! 32.94	390.	! J ! ! J ! ! J !
! 40.	!Unknown	! 33.22	. 670.	! J !
! 41.	!Unknown	! 34.61	290.	! J !
! 42.	!Unknown	! 34.98 !	270.	! J ! ! J !
1 43.	!Unknown	! 35.71 !	210.	
! 44.	!Unknown	! 36.67 !	250.	! J!
! 45.	!Unknown	! 37.39	530.	! J !
! 46.	!Unknown	! 38.69 !	250.	! J !
! 47.	!Unknown	! 39.31 !	220.	! J !
48.	!Unknown	! 40.47 !	220.	! J !
1	FORM I SV-TIC	!!	1	! <u> </u>

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA









Fage 15 of 24

LLI Sample No. WW 3001162

West Sump Grab Water Sample
Chrysler - Dayton Thermal Products

ANALYSIS: 4828

The GC Fingerprint for this sample indicates a complex mixture of retroleum based and nonpetroleum organic materials. The overall sample fingerprint elutes throughout the range C10 (n-decane) through C40 (n-tetracontane) normal hydrocarbons and consists primarily of two distinct unresolved regions. The early eluting (more volatile) region elutes in the C10 - C20 (n-eicosane) range. This region is primarily unresolved; however, the overall pattern is a fairly good match for our #2 fuel oil reference pattern. Additionally, two large single component peaks, which are not present in the fuel reference pattern, elute just prior to C12 (ncodecane) and C14 (n-tetradecane), respectively. This region, including the two component peaks, accounts for approximately 30%, ty weight of the total organic content of the sample. The later eluting (less volatile) region elutes in the C20 - C40 range and is also unresolved. This region accounts for approximately 70%, by weight, of the total organic content of the sample. The unresolved nature of the two regions is typical of lubricating oil fractions analyzed by this method. However, the presence of fuel components indicates a complex mixture of lubricating oil fractions with volatile and semi-volatile components that are typical of diesel/#2 and heavier weight, residual fuel oil fractions.

For the purpose of quantitation, we base total area response of the sample pattern(s) on our #2 fuel oil reference standard response. When we calculate total sample area eluting in the C8 (n-octane) through C40 normal hydrocarbon range as petroleum distillate/product (#2 fuel oil), it is present at 710 mg/l in the sample.

The GC Fingerprint for this sample was compared to the fingerprint for LL 3001161, a client submitted reference material. The overall sample fingerprint is a good match for LL 3001161. The relative ratios of the distinct regions are significantly different from the reference fingerprint. The single peak eluting just before C14 is a retention time match for the single component in LL 3001161.

Consider the quantitation an approximation due to the differences between the sample pattern(s) and the reference patterns.

Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs





LABORATORY CHRONICLE

Lancaster Laboratories

A division of Thermo Analytical Inc.

Page: 16 of 24

LII Sample No. WW 3001162 Collected: 09/15/98 at 18:00 by DO

Submitted: 09/17/98

West Sump Grab Water Sample

Chrysler - Dayton Thermal Products WESTS SDG#: LBG01-02

Account No: 10108 Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

CAT	ANALYCE NAME	NETHON			YSIS	
NO	ANALYSIS NAME	METHOD	TRIAL	ID	DATE AND TIME	ANALYST
	PCBs in Water	SW-846 8082	1		09/24/98 2229	Michael Kielb
0817	Water Sample Pest. Extraction	SW-846 3510C	1		09/22/98 1515	Lee L. Munro
	BNA Water Extraction	SW-846 3510C	1		09/18/98 0830	Maria A. Davenport
	App. IX Semivolatiles-Water	SW-846 8270C	1 1 1		10/12/98 2247	Mark A. Ratcliff
	App. IX Semi-volatiles con't	SW-846 8270C	1		10/12/98 2247	Mark A. Ratcliff
131.1	App. IX Semi-volatiles con't	SW-846 8270C	1 1		10/12/98 2247	Mark A. Ratcliff
131.2	App. IX Semi-volatiles con't	SW-846 8270C	1		10/12/98 2247	Mark A. Ratcliff
044.5	Solvent Identification	SW-846 8015B modified	1 1 1 1		09/24/98 1355	Tracy A. McNickle
	Solvent Identification (cont.)		1		09/24/98 1355	Tracy A. McNickle
	Extraction - Fuel/TPH (Waters)		1		09/18/98 0930	Maria A. Davenport
	TPH by GC-FID in Water		1		09/22/98 0935	Robert G. Brown
9188	Total Hydrocarbons as n-Hexane	SW-846 8015B			09/24/98 1431	Tracy A. McNickle



QUALITY CONTROL REPORT



Page: 17 of 24

LIJI Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

SAMPLE LOQ	SAMPLE UNITS	BLANK	DUP RPD	MS	MSD	MS RPD	LCS	LCS DUP	LCS RPD	LCS LOW	LIMITS HIGH
0173 PCBs in Wate	 er	- Batch: 982650008A									
0639 PCB-1016 1,000.		N.D.		89	88	1	85	87		43	126
064C PCB-1221	.g/1	N.D.									
0641 PCB-1232 1,000. ι	.g/1	N.D.									
0642 PCB-1242 1,000.	1 /1	N.D.									
0643 PCB-1248 1,000. 0644 PCB-1254	ug/1	N.D.									
	.g/1	N.D.									
1,000.	.g/1	N.D.		95	94	1	90	92		51	126
1309 App. IX Semi	ivolatiles-Water	Batch: 98282WAG026									
3920 pyrid ne 5,000. ι	ıg/l	N.D.									
3913 N-nitroso 5,000. u	Jg/1	N.D.									
	ıg/1	N.D.									
5,0 0 0. u	omethylethylamine ug/l	N.D.									
	.g/ ⁻	N.D.									
1291 N-nitroso 5,000. u	/g/	N.D.									
1279 ethylmeth 5,000. (ig/`	N.D.									
3918 phenol 100. ι	ıg/˙	N.D.									
0925 aniline 5,000. t	ig/"	N.D.									
3867 bis(2-ch) 5,000. (1 g/↑	N.D.									
3874 2-chlorop 5,000 i 3883 1,3-dichl	ic/i	N.D.									
3,000	A9/ 1	N.D.									
	.g/`l	N.D.									
	ıg/T	N.D.									
3882 1,2-dichi 5,000 υ	id/J	N.D.									

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3 (4) der Lubor stof (6) 1003 (6-4) (50 and 5 km 50 3 (4) 12 303 (4) 12 47 54 17 605 (2405 (14) 12 30 10 5 and 17 7 7 7 7 8 8 8 1



QUALITY CONTROL REPORT



Page: 18 of 24

LCS LIMITS

HIGH

LOW

LLI Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

Classification of the first engineers on provincial subsequences.

LCS

DUP

RPD

	SAMPLE UNITS	BLANK
3877 2-methy ph 100. ug	/1	N.D.
1271 bis(2-chlo 5,000, ug	roisopropyl)ether	N.D.
3878 3- and 4-m 5,000. ug	/ 1	N.D.
1295 N-nitrosop 5,000. ug 1267 acetopheno	/1	N.D.
5,000. ug 1293 N-nitrosom	/1	N.D.
5,000. ug 3915 N-mitrosod	/l i-n-propylamine	N.D.
5,000. ug 1306 o-toluidin	e	N.D.
5,000. ug 3902 hexachloro 5.000. ug	ethane	N.D. N.D.
3910 nitrobenze 5,000. ug	ne /1	N.D.
1294 N-nitrosop 5,000 ug	iperidine /l	N.D.
3904 isophorone 5,000. ug 3911 2-nitrophe	/]	N.D.
5,000. ug.	/1 	N.D.
	• • • • • • • • • • • • • • • • • • • •	Batch: 98282WAG026
3890 2,4 dimethy 100 ug,	/]	N.D.
3866 bis(2-chlor 5,000 ug, 1307 0.00-trie	roethoxy)methane /l thylphosphorothioat	N.D.
5,000. ug, 3886 2,4-dichloi	/] ropheno]	N.D.
5,000. ug, 3921 1,2,4-trick	/l ilorobenzene	N.D.
5,000. ug, 3906 naphthalene 5,000. ug,	€	N.D. N.D.
1273 2,6-dichlor 5,000. ug/	ropheno1	N.D.
3871 4-chloroani 5,000. ug/	iline /1	N.D.
1281 hexachlorop 5,000. ug/	/ }	N.D.
3900 hexachlorob 5,000. ug/	outadiene ']	N.D.



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QUALITY CONTROL REPORT

LCS RPD

MS RPD



Page: 19 of 24

LCS LIMITS

LOW HIGH

LII Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

Gay leverge light in skripting from property of endlore that in the

DUP

RPD

Sample Loq	SAMPLE UNITS	BLANK
1300 1.4-pheny 100.000. ug 1290 N-nitrosoc	g/1	N.D.
5,000. ug	₃ /1	N.D.
3872 4-chloro-3 5.000. ug 1303 safrole	g/l	N.D.
5,000. ug	g/1 	N.D.
3905 2-methylna 5,000 ug	aphthalene g/l etrachlorobenzene	N.D.
5.000. ud	3/1	N.D.
3901 hexachlord 13,000. ud 3923 2,4,6-trid	3/]	N.D.
5.000. ug	critorophenoi g/l chlorophenol	N.D.
5,000. ug	g/ I	N.D.
1283 isosafrole 5.000. ug	1/1	N.D.
3873 2-chlorona 5,000. ug	1/ 1	N.D.
3907 2-nitroani	iline	N.D.
5,000. ug 1286 1,4-naphth	noquinone	
50,000 ug 3891 dimethylph	nthalate	N.D.
5,000 ug 1278 1,3-dinitr	g/l robenzene	N.D.
5,000. ug 3895 2,6-dimitr	1/1	N.D.
5.000. ug	g/1	N.D.
311 App. IX Semi-	volatiles con't	Batch: 98282WAG026
3858 acenaphthy 5,000. ug	v1 erie	N.D.
3908 3-nitroani	line	
5,000. ug 3857 acenaphthe	ene	N.D.
5,000. ug 3893 2,4-dinitr]/]	N.D.
25,000. ug	J/ l	N.D.
3912 4-nitrophe 25,000. ug	;/ 1	N.D.
3879 dibenzofur 5,000. ug	ran 1/1	N.D.
1297 pentachlor 5,000. ug	obenzene	N.D.
5,000. ug) [,] '	14.0.

MENSES

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Page: 20 of 24

LCS LIMITS LOW HIGH

LII Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette, Brashears & Graham MN

MS RPD

DUP RPD

SAMPLE LOQ	SAMPLE UNITS	BLANK
3894 2,4-dinitr 5,000. ug	/1	N.D.
1287 1-naphthyl 5,000. ug	/1	N.D.
1288 2-naphthyl 5,000. ug	/1	N.D.
0438 2,3,4,6-Te 5,000. ug	trachlorophenol	N.D.
3887 diethylpht 5.000. ug	halate	N.D.
3875 4-chloroph 5,000. ug	enylphenylether	N.D.
3898 fluorere 5,000. ug		N.D.
1296 5 nitro-o-	toluidine	
5,000. ug 3909 4-nitrcani	line	N.D.
5,000. ug. 3892 4,6-dinitro	o-2-methylphenol	N.D.
13,000. ug 3914 N nitrosod	/1	N.D.
100. ug.		N.D.
5,000. ug.	/1	N.D.
1308 1,3,5-trin 10,000. ug	/1	N.D.
1299 phenacetin 5,000. ug,	/1	N.D.
3869 4-bromopher 5,000. ug/	/1	N.D.
1313 diallate (1 5,000. ug/	trans/cis) /l	N.D.
1274 dimethoate 10,000. ug/		N.D.
3899 hexachlorob	perizene	
5,000. ug/	1	N.D.
		Batch: 98282WAG026
1269 4-aminobiph 5,000. ug/	neriyî Vî	N.D.
3916 pentachlord	pheno1	N.D.
1302 pronamide		
5,000. ug/ 1298 pentachloro	on trobenzene	N.D.
5,000. ug/ 3917 phenanthrer	ne	N.D.
5,000. ug/	΄Ί	N.D.



RPD



Page: 21 of 2

LCS LIMITS

LOW HIGH

LLI Sample No. 3001162 West Sump Grat Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

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SAMPLE LOQ	SAMPLE UNITS	BLANK
3859 anthracene 5,000. ug.		N.D.
3880 di-n-butyly 5,000 ug/	/1	N.D.
50,000. ug.		N.D.
3368 methapyrile 5,000. ug/		N.D.
1282 isodrin 13,000. ug/	/ 1	N.D.
3897 fluoranther 5,000. ug/		N.D.
3919 pyrene 5,000. ug/		N.D.
	[amino]azobenzene	N.D.
1272 ch orobenz	i]ate	
10,000. ug/ 1277 3,3'-dimeth	yl benzidine	N.D.
13,000. ug/ 3870 but:ylbenzyl		N.D.
5,000. ug/ 1268 2-acetylami	' 1	N.D.
5,000. ug/		N.D.
5,000. ug/ 3860 benzo(a)ant	ין)	N.D.
5,000. ug/	ן'	N.D.
100. ug/	hexyl)phthalate	N.D.
3876 chrysene 5,000. ug/		N.D.
3896 di-n-octylp 5,000. ug/		N.D.
1276 7.12-dimeth 5.000. ug/	ylbenz(a)anthracene	N.D.
3861 berzo(b)flu 5,000. ug/	ioranthene	N.D.
3862 berzo(k)flu	oranthene	
5,000. ug/ 3864 berzo(a)pyr	ene	N.D.
5,000. ug/ 1284 3-methylcho		N.D.
5,000. ug/		N.D.
5.000. ug/ 3881 ditenz(a.h)	'1	N.D.
5,000. ug/	ገ	N.D.
3863 berzo(ghi)p 5.000. ug/		N.D.



Page: 22 of 24

LLI Sample No. 3001162 West Sump Grat Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette Brashears & Graham MN

SAMPLE LOQ

SAMPLE UNITS

BLANK

DUP RPD

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LCS LIMITS LCS DUP RPD LOW HIGH

3370 thionazin 5,000. ug/1

N.D.

Batch: 982670002A

0445 Solvent Identif cation

0854 n-hexane % by wt. 0.050

0855 n-heptane

0.050 % by wt.

0856 n-octane

0.050 % by wt. 0857 isooctane

0.050 % by wt.

0858 benzene

0.050 % by wt.

0859 toluene

0.050 % by wt.

0860 ethyl penzene

0.050 % by wt.

0861 xylenes

0.050 % by wt.

0862 styrene

0.050 % by wt.

1120 chlorobenzene

0.050 * by wt.

0863 methanol

0.050 % by wt. 1118 n.propanol

% by wt.

0.050

0864 ethanol

0.350

% by wt. 0865 isopropanol

0.350

% by wt. 0866 n-butano1

% by wt. 0.350 0867

isobutanol 0.050 % by wt.

0868 acetorie

* by wt. 0.050

0869 methyl ethyl ketone

0.050 % by wt. 0870 methyl isobutyl ketone

> 0.050 % by wt.

1119 cyclohexanorie

0.050 * by wt. 0871 methy; cellosolve

∦ by wt. 0.050

0872 ethyl cellosolve

0.050 % by wt.



and with Disposit of Hi MEMBER (2015 Net H. and 8) (an fevrer 64 17605-7403) Strongerigg (1844 1751 176 176 176

RPD

Lancaster Laboratories A division of Thermo Analytical Inc.

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Page: 23 of 24

LCS LIMITS

HIGH

LOW

LLI Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

SAMPLE

UNITS

SAMPLE

L00

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

RPD

LCS

DUP

RPD

0873 butyl cellosolve 0.050 ∦ by wt. celloscive acetate 0.050 ∦ by wt. ethyl acetate 0.050 🗶 by wt. propyl acetate 0.050 % by wt. isopropyl acetate 0.050 % by wt. 0878 n-butyl acetate 0.050 % by wt. 1116 ethyl ether 0.050 % by wt. carbon tetrachloride 0.050 % by wt. 0881 chloroform 0.050 % by wt. 0882 methylene chloride 0.050 ∦by wt. 0883 1.1-dichloroethane 0.050 ∜ by wt. 0884 1,2-dichloroethane 0.050 % by wt. 0885 1,1,1-trichTcroethane 0.050 ✗ by wt. 1,1,2-trichloroethane 0886 0.050 ∜ by wt. 0887 trichlcroethylene 0.050 % by wt. 0888 tetrachloroethylene 0.050 % by wt. 0889 Freon 113 % by wt. 0.050 1117 pyridine 0.050 % by wt. 0466 Solvent Identification (cont.) Batch: 982670002A 0853 n-pentare 0.050 % by wt. 4828 TPH by GC-FID in Water Batch: 982580008B J264 ------4829 Gasoline 40. mg/l N.D. 4830 Kerosene 40. mg/l N.D. 4831 Diese1/#2 Fue1 125 91 95 75 40. 95 95 mg/l N.D.



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Page: 24 of 24

LLI Sample No. 3001162 West Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

SI	urroga	TE	SUMMARY

	TRIAL ID	SURROGATE	RECOVERY *	SURROGAT LOW	E LIMITS HIGH
0173 PCBs in Water		TCX DCB	346 192	39 22	117 142
1309 App. IX Semivolatiles-Water		Phenol-d6 2-Flphenol	0	7 25	74 88
1310 App. IX Semi-volatiles con't		Nitrobz-d5 2-Fbiphnyl Tphenyld14	2 0 1	47 51 37	114 106 119
4828 TPH by GC-FID in Water		Chlorobenz o-Terpheny	(5) (5)	50 75	120 135

(5) Accurate surrogate recoveries could not be determined due to interferences or dilution necessary for this sample.



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Page: 1 of 24

LII Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

SOUTS SDG#: _BG01-03*

CAT NO.

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON Rel.

AS RECEIVED

LIMIT OF ANALYSIS NAME RESULTS QUANTITATION UNITS

See Page See Page 0173 PCBs in Water 0893 Semivolatile Library Search The results from the semivolatile library search are listed on the attached FORM 1F - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form. An "X" indicates an isomer of the listed

compound.

App. IX Semivolatiles-Water App. IX Semi-volatiles con't App. IX Semi-volatiles con't 1309 See Page 1310 See Page See Page 1311 67 See Page App. IX Semi-volatiles con't 1312 Solvent Icentification Solvent Icentification (cont.) See Page 0445

0466 4828 See Page TPH by GC-FID in Water See Page 9188 Total Hydrocarbons as n-Hexane N.D. 2,000. ррп

The reported value for total hydrocarbons as n-hexane represents total volatile organic material detected by the solvent screen conditions for the range of C5 (n-pentane) through C10 (n-decane) normal hydrocarbons.

Leggette, Brashears & Graham MN ATTN: Mr. Ken Vogel 1 COPY "TO Cata Package Group

> Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter 19:36:43 D 0002 135779 632339 0.00 00085400 ASR000 885

> > Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

Take a professional control of the control of particles





Page: 2 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by 00

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2001 00			AS RE	CEIVED	
CAT NO.	ANALYS IS	NAME		RE:	SULTS	LIMIT OF QUANTITATION	UNITS
PCBs	in Water						
0639 0640 0641 0642 0643 0644 0645	PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260				N.D. N.D. N.D. N.D. N.D. N.D.	1,000. 1,000. 1,000. 1,000. 1,000. 1,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1
		prorfering peaks	on the	chromatogram			onrecent

Due to interfering peaks on the chromatogram, the values reported represent the lowest quantitation limits obtainable.

Despite numerous cleanup methods, we were unable to reach our usual

quantitat on limits.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

> Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs

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Page: 3 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

Account No: 10108

Leggette, Brashears & Graham MN

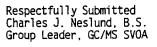
1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

CAT	0012 200#: LbG01-03*		AS	RECEIVED LIMIT OF	
NO.	ANALYSIS NAME	RES	ULTS	QUANTITATION	UNITS
App.	IX Semivolatiles-Water				
3920 3913 1301 1292 1285 1291 1279 3918 0925 3874 3883 3884 3865 3877 1271 3878 1297 1293 3915 1306 3902 3910 1294 3911	pyridine N-nitrosodimethylamine 2-picoline N-nitrosomethylethylamine methylmethanesulfonate N-nitrosodiethylamine ethylmethanesulfonate phenol aniline bis(2-chloroethyl)ether 2-chlorophenol 1.3-dichlorobenzene 1.4-dichlorobenzene benzylalcohol 1.2-dichlorobenzene 2-methylphenol bis(2-chloroisopropyl)ether 3- and 4-methylphenol N-nitrosodyrrolidine acetophenone N-nitrosodi-n-propylamine o-tcluidine hexachloroethane nitrobenzene N-nitrosodiperidine isophorone 2-nitrophenol		N.D.D.D.D.D.D.D.D.D.D.D.D.D.D.D.D.D.D.D	1,000. 1,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1
	Aramite is not reported due	to unavailability			d.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



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Page: 4 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

CAT

NO. ANALYSIS NAME AS RECEIVED

LIMIT OF **RESULTS**

QUANTITATION

App. IX Semivolatiles-Water

The QC limits for the following compounds are advisory only until sufficient data points can be obtained to calculate statistical limits:

1.3 5-Trinitrobenzene 1,4 Naphthalene

1.4 Phenylenediamine 2-Acetylaminofluorene

Hexach lorophene 4-N troquinoline-1-oxide

5-N tro-o-toluidine

Account No: 10108

Leggette Brashears & Graham MN

UNITS

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON Rel.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

> Cotenhat materies $(\mathbb{P}_{\mathbb{P}_{+}}^{(n)})_{n} \in \mathbb{P}_{+}^{(n)} \times \mathbb{P}_{+}$

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA

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Page: 5 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

Account No: 10108

Leggette, Brashears & Graham MN

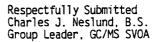
1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

50	0015 SDG#: LBG01-03*	AS REC	ETVEN	
CAT		AS REC	LIMIT OF	
CN.	ANALYSIS NAME	RESULTS	QUANTITATION	UNITS
App.	IX Semi-volatiles con't			
3890 3866 1307 3886 3921 3906 1273 3871 1281 1290 1390 1290 3872 1303 3905 1304 3901 3923 1283 3922 1283 3873 3907	2.4-dimethylphenol bis(2-chloroethoxy)methane 0.0.0-triethylphosphorothioate 2.4-dichlorophenol 1.2.4-trichlorobenzene naphthalene 2.6-dichlorophenol 4-chloroaniline hexachloropropene hexachlorobutadiene 1.4-phenylenediamine N-ritroscdi-n-butylamine 4-chloro-3-methylphenol safrole 2-methylraphthalene 1.2.4.5-tetrachlorobenzene hexachlorocyclopentadiene 2.4.6-trichlorophenol isosafrole 2-cnlororaphthalene 2-nitroariline	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	1,000. 1,000.	ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1
1286	1,4-napnthoquinone	N.D. N.D.	1,000. 10,000.	ug/1 ug/1
3891	dimethylphthalate	N.D.	1,000.	ug/1
1278	1.3 dinitrobenzene	N.D.	1,000.	ug/1
3895	2,6-dinitrotoluene	N.D.	1,000.	ug/1

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



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Page: 6 of 24

LII Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

	7313 SDG# . LDGU1-03"	AS REC		
CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
App.	IX Semi-volatiles con't			
3858 3908 3857 3893 3912 3879 1297 3894 1238 0438 3875 3875 3898 1296 3899 3869 1313 1274 3899	acenaphthylene 3-nitroaniline acenaphthene 2,4-dinitrophenol 4-nitrophenol dibenzofuran pentachlorobenzene 2,4-dinitrotoluene 1-naphthylamine 2-naphthylamine 2-naphthylamine 2,3,4,6-Tetrachlorophenol diethylphthalate 4-chlorophenylphenylether flucrene 5-nitro-o-toluidine 4-nitroaniline 4-nitrosodiphenylamine tetraethyldithiopyrophosphate 1,3,5-trinitrobenzene pheracetin 4-bromophenylphenylether diallate (trans/cis) dimethoate hexachlorobenzene N-nitrosodiphenylamine decomposes in the The result reported for N-nitrosodipheny total of ooth compounds.	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	1.000. 1.000.	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l
	•			

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA





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LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: 18601-03*

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

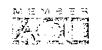
50	UTS SDG#: LBG01-03*	AS REC	EIVED	
CAT	MAN VOTO MANO	DECL!! TO	LIMIT OF	
NO.	ANALYSIS NAME	RESULTS	QUANTITATION	UNITS
App.	IX Semi-volatiles con't			
1269	4-aminobiphenyl	N.D.	1,000.	ug/1
3916	pentachlorophenol	N.D.	2,500.	ug/]
1302 1298	pronamide	N.D. N.D.	1,000.	ug/]
3917	pentachloronitrobenzene phenanthrene	N.D.	1,000. 1,000.	ug/1 ug/1
3859	anthracene	N.D.	1,000.	ug/1 ug/1
3880	di-n-butylphthalate	N.D.	1.000.	ug/1
1289	4-nitroquinoline-1-oxide	N.D.	10,000.	ug/1
3368	methapyrilene	N.D.	1,000.	ug/1
1282	isodrin	N.D.	2,500.	ug/1
3897	fluoranthene	N.D.	1,000.	ug/l
3919	pyrene	N.D.	1,000.	ug/]
1275	p-(dimethylamino)azobenzene	N.D.	1,000.	ug/l
1272 1277	chlorobenzilate	N.D.	2.000.	ug/]
3870	3,3'-dimethylbenzidine	N.D.	2,500.	ug/1
1268	butylbenzylphthalate 2-acetylaminofluorene	N.D. N.D.	1,000. 1,000.	ug/1 ug/1
3885	3,3'-dichlorobenzidine	N.D.	1.000.	ug/1
3860	benzo(a)anthracene	N.D.	1,000.	ug/1
3868	bis(2-ethylhexyl)phthalate	N.D.	1,000.	ug/l
3876	chrysene	N.D.	1,000.	ug/1
3896	di-n-octylphthalate	N.D.	1,000.	ug/1
1276	7,12-dimethylbenz(a)anthracene	N.D.	1,000.	ug/1
3861	benzo(b)fluoranthene	N.D.	1,000.	ug/l
3862	benzo(k)fluoranthene	N.D.	1,000.	ug/l
3864	benzo(a)pyrene	N.D.	1,000.	ug/1
1284 3903	3-methylcholanthrene	N.D.	1,000.	ug/1
3881	indeno(1,2,3-cd)pyrene dibenz(a,h)anthracene	N.D. N.D.	1,000. 1,000.	ug/1
3863	benzo(ghi)perylene	N.D.	1,000.	ug/1 ug/1
3370	thionazin	N.D.	1,000.	ug/1
			-,	

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

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Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA

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P.O. 3CHRY4/DAYTON

Rel.

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by 00

Submitted: 9/17/98 Reported: 10/21/98

Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SCUTS SDG#: LBG01-03*

NO. ANALYSIS NAME AS RECEIVED

LIMIT OF RESULTS

QUANTITATION

Account No: 10108

St. Paul, MN 55112

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700

UNITS

App. IX Semi-volatiles con't

The quantitation limits for the GC/MS semivolatile compounds were raised due to the high concentration of non-target compounds.

Due to insufficient sample, the quantitation limits for the GC/MS semivolatile compounds were raised.

The usual quantitation limits could not be attained due to the matrix of the sample or interferences observed in the GC/MS semivolatile analysis.

Batch QC was not extracted with this sample.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

> Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA





Page: 9 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by 00

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Account No: 10108

Leggette.Brashears & Graham MN

1210 County Rd. E W. Ste. 700 St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

	JTS SDG#: LBG01-03*	AS REC		
CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
Solve	nt Identification			
0854 0855 0856 0857 0858 0859 0850 0851 1120 0853 1118 0864 0865 0866 0867 0870 1119 0871 0872 0873 0874 0875 0876 0877 0878 1116 0831 0832 0833 0834 0835	n-hexane n-heptane n-octane isooctane benzene toluene ethyl benzene xylenes styrene chlorobenzene methanol n-propanol ethanol isopropanol n-butanol isobutanol acetone methyl ethyl ketone methyl isobutyl ketone cyclohexanone methyl cellosolve ethyl cellosolve ethyl cellosolve cellosolve acetate ethyl acetate propyl acetate isopropyl acetate n-butyl acetate ethyl ether carbon tetrachloride chloroforn methylene chloride 1.1-dichloroethane 1,2-dichloroethane 1,1.1-trichloroethane 1,1.2-trichloroethane trichloroethylene	N.D. N.D. N.D. N.D. N.D. N.D. N.D. N.D.	0.050 0.050	************ wtt byyywtt colored byywtt col

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter

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Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs







Page: 10 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by DO

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

ANALYSIS NAME

AS RECEIVED CAT

Solvent Identification

ND.

tetrachloroethylene Freon 113 0888 N.D. 0.050 % by wt. 0889 N.D. 0.050 % by wt. 1117 pyr dine N.D. 0.050 % by wt.

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

RESULTS

LIMIT OF

QUANTITATION

UNITS

Account No: 10108

Leggette, Brashears & Graham MN

P.O. 3CHRY4/DAYTON Rel.

Questions? Contact your Client Services Representative at (717) 656-2300 Kathy Klinefelter



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Page: 11 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by 00

Submitted: 9/17/98 Reported: 10/21/98 Discard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: LBG01-03*

CAT

ANALYSIS NAME NO.

Solvent Identification (cont.)

0853 n-pentane

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED LIMIT OF

RESULTS QUANTITATION UNITS

N.D.

0.050 % by wt.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300



Eartraster Landishur As 2425 New Holland Pre 20 8 | 12425 Candauter PA 12605-2475 Candauter PA 12605-2475 CONFRENCISON PAL CONFRES (1881) Respectfully Submitted Jenifer E. Hess. B.S. Group Leader Pesticides/PCBs

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Page: 12 of 24

LLI Sample No. WW 3001163 Collected: 9/15/98 at 18:25 by 00

Submitted: 9/17/98 Reported: 10/21/98 D scard: 12/21/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

SCIUTS SDG#: LBG01-03*

ANALYSIS NAME

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W. Ste. 700

St. Paul, MN 55112

P.O. 3CHRY4/DAYTON

Rel.

AS RECEIVED

LIMIT OF

RESULTS UNITS

QUANTITATION

TPH by GC-FID in Water

CAT

NO.

4829

Gasoline N.D.

2,000. mg/l 2,000. mg/1

4830 Kerosene N.D. 4831 Diesel/#2 Fuel 2.000. 5.500. mq/1

The quantitation limits were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.

See attached fingerprint comment.

Questions? Contact your Client Services Representative Kathy Klinefelter at (717) 656-2300

Military - Property

Respectfully Submitted Jenifer E. Hess. B.S. Group Leader Pesticides/PCBs

Special group of the control of the





age 13 of 24 1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET EPA SAMPLE NO.

SOUTS

Lab Name: LANCASTER LABS Contract: SDG No.: Lab Code: LANCAS Case No.: . SAS No.:

Lab Sample ID: 3001163 Matrix: (soil/water) WATER

Sample wt/vol: 500 (g/mL) ML Level: (low/med) LOW Lab File ID: >LJ267

Date Received: 09/17/98 Date Extracted: 10/09/98 Date Analyzed: 10/12/98 Dilution Factor: 250.0 . dec. % Moisture: not dec. Extraction: (SepF/Cont/Sonc) SEPF GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Number TICs found: 50

Respectfully Submitted Charles J. Neslund. B.S. Group Leader, GC/MS SVOA





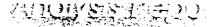
age	14 of	24 1F	EPA SAMPLE NO.
		SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET	
		!	SOUTS
Lab	Name:	LANCASTER LABS Contract: !	
Lab	Code:	LANCAS Case No.: . SAS No.: SDG	No.:
Matr	rix: (soil/water) WATER Lab Sample ID:	$300\overline{1163}$
Samt	ole wt	/vol: 500 (g/mL) ML	
		(low/med) LOW Date Received:	
		e: not dec dec Date Extracted	
		n: (SepF/Cont/Sonc) SEPF Date Analyzed:	
GPC	Cleanu	μρ: (Y/N) N pH: . Dilution Facto	
		CONCENTRATION UNITS:	
Nun	mber Ti	Cs found: 50 (ug/L or ug/Kg) UG/L	

! CAS NUMBER	! COMPOUND NAME	! RT	EST. CONC.	! Q !
. 31.	!Unknown alkane	22.39	49000.	. J
! 32.	!Unknown	! 22.52	28000.	! J !
! 33.	!Unknown	! 22.70	21000.	i j i
! 34.	!Unknown	! 22.81	13000.	! J !
! 35.	!Unknown alkane	! 23.21	66000.	! J !
! 36.	-! Unknown	! 23.53 !	14000.	! J !
! 37.	!Unknown	! 24.11 !	8800.	! J ! ! J ! ! J ! ! J !
! 38.	!Unknown	! 24.20 !	21000.	! J !
! 39.	!Unknown alkane	! 24.49 !	16000.	! J !
! 40.	!Unknown alkane	! 24.58 !	24000.	! J !
! 41.	!Unknown	! 25.48 !	8500.	! J !
! 42.	!Unknown alkane	! 25.64 !	5400.	! J !
! 43.	!Unknown alkane	! 25.77 !	3200.	! J !
! 44.	!Unknown	! 26.24 !	6200.	! J !
! 45.	!Unknown	! 27.29 !	3800.	! J !
46.	!Unknown	! 30.34 !	4000.	! J !
! 47.	!Unknown	! 31.19 !	3500.	! J !
! 48	!Unknown	! 31.31 !	3300.	! J !
49.	Unknown	! 32.66 !	4000.	! J !
! 50.	!Unknown	! 33.98 !	3900.	! J !
!	<u></u>	!!		.!!
	FORM I SV-TIC			1/ <mark>87 Re</mark> v.

Respectfully Submitted Charles J. Neslund, B.S. Group Leader, GC/MS SVOA



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Page 15 of 24

LLI Sample No. WW 3001163

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

ANALYSIS: 4828

The GC Fingerprint for this sample indicates a complex mixture of petroleum based and nonpetroleum organic materials. The overall sample fingerprint elutes throughout the range C10 (n-decane) through C40 (n-tetracontane) normal hydrocarbons and consists primarily of two distinct unresolved regions. The early eluting (more volatile) region elutes in the C10 - C20 (n-eicosane) range. This region is primarily unresolved; however, the overall pattern is a fairly good match for our #2 fuel oil reference pattern. Additionally, a large single component peak, which is not present in the fuel reference pattern, elutes just prior to C14 (n-tetradecane). This region, including the component peak, accounts for approximately 90%, by weight, of the total organic content of the sample. The later eluting (less volatile) region elutes in the C20 - C40 range and is also unresolved. This region accounts for approximately 10%, by weight, of the total organic content of the sample. The unresolved nature of the two regions is typical of lubricating oil fractions analyzed by this method. However, the presence of fuel components indicates a complex mixture of lubricating oil fractions with volatile and semi-volatile components that are typical of diesel/#2 and heavier weight, residual fuel oil fractions.

For the purpose of quantitation, we base total area response of the sample pattern(s) on our #2 fuel oil reference standard response. When we calculate total sample area eluting in the C8 (n-octane) through C40 normal hydrocarbon range as petroleum distillate/product (#2 fuel oil), it is present at 5,500 mg/l in the sample.

The GC Fingerprint for this sample was compared to the fingerprint for LL 3001161, a client submitted reference material. The overall sample fingerprint is a good match for LL 3001161. The relative ratios of the distinct regions are significantly different from the reference fingerprint. The single peak eluting just before C14 is a retention time match for the single component in LL 3001161.

Consider the quantitation an approximation due to the differences between the sample pattern(s) and the reference patterns.

Respectfully Submitted Jenifer E. Hess, B.S. Group Leader Pesticides/PCBs





LABORATORY CHRONICLE

Page: 16 of 24



LLI Sample No. WW 3001163 Co lected: 09/15/98 at 18:25 by DO

Submitted: 09/17/98

South Sump Grab Water Sample

Chrysler - Dayton Thermal Products SOUTS SDG#: _BG01-03*

Account No: 10108

Leggette, Brashears & Graham MN

1210 County Rd. E W, Ste. 700 St. Paul, MN 55112

CA NO	ANALYSIS NAME	METHOD	TRIAL	anal Id	YSIS DATE AND TIME	ANALYST
0173 081.7	PCBs in Water Water Sample Pest. Extraction	SW-846 8082 SW-846 3510C	1		09/24/98 2249 09/22/98 1515	
0813 1309 1310 1311 1312	BNA Water Extraction App. IX Semivolatiles Water App. IX Semi-volatiles con't App. IX Semi-volatiles con't App. IX Semi-volatiles con't	SW-846 3510C SW-846 8270C SW-846 8270C SW-846 8270C SW-846 8270C	1 1 1 1			Mark A. Ratcliff
0445 0466 2376 4828 9188	Solvent Identification Solvent Identification (cont.) Extraction - Fuel/TPH (Waters) TPH by & -FID in Water Total Hydrocarbons as n-Hexane	SW-846 8015B, modified	1 1 1		09/24/98 1431 09/24/98 1431 09/18/98 0930 09/22/98 1211 09/24/98 1507	Maria A. Davenport



LCS RPD



Page: 17 of 24

LCS LIMITS

HIGH

126

126

LOW

43

51

LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette, Brashears & Graham MN

		RPD	MS	MSD	MS RPD	LCS	LCS DUP
0173 PCBs in Water	Batch: 982650008A						
0639 PCB-1016 1,000. ug/l	N.D.		89	88	1	85	87
0640 PCB-1221				-	_		
1,000. ug/l 0641 PCB-1232	N.D.						
1,000. ug/l	N.D.						
0642 PCB-1242 1,000. ug/1 0643 PCB-1248	N.D.						
1,000. ug/l 0644 PCB-1254	N.D.						
1,000. ug/1 0645 °CB-1260	N.D.						
1,000. ug/1	N.D.		95	94	1	90	92
1309 App. IX Semivolatiles-Water	Batch: 98282WAG026						
3920 pyridine							
1,000. ug/l 3913 N-nitrosodimethylamine	N.D.						
1,000. ug/l	N.D.						
1301 2-picoline 1,000. ug/1	N.D.						
1292 N nitrosomethylethylamine 1,000. ug/l	N.D.						
1285 methylπethanesulfonate 1,030. ug/l	N.D.						
1291 Nonitrosodiethylamine 1.000. ug/l	N.D.						
1279 ethylmethanesulfonate 1,000. ug/l	N.D.						
3918 phenol 1,000. ug/l	N.D.						
0925 aniline							
1,000. ug/l 3867 bis(2-chloro∋thyl)ether	N.D.						
1,000. ug/l 3874 2-chlorophenol	N.D.						
1,000. ug/1	N.D.						
3883 1,3-dichloropenzene 1,000. ug/l	N.D.						
3884 1,4-dichlorobenzene 1,000. ug/l	N.D.						
3865 benzylalcohol 2,000. ug/l	N.D.						
3882 1,2-dichlorobenzene 1,000, ug/l	N.D.						



RPD

LCS



Page: 18 of 24

LCS LIMITS

LOW HIGH

LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette.Brashears & Graham MN

MSD

DUP

RPD

		SAMPLE UNITS	BLANK
	3877 2-methylpho 1,000. ug	/1	N.D.
	1.000. ug.	roisopropyl)ether /l	N.D.
	3878 3- and 4-me 1,000. ug	/1	N.D.
	1295 N-nitrosopy 1,000. ug	/1	N.D.
	1267 acetophenor 1,000. ug.	/1	N.D.
	1293 N-nitrosom 1,000. ug	/1	N.D.
	3915 N-nitrosod 1,000. ug/	/1	N.D.
	1306 o-toluidine 1,000. ug	/]	N.D.
	3902 hexachloro	/1	N.D.
	3910 nitrobenzer 1,000. ug/	/1	N.D.
	1294 N-nitrosop 1,000. ug/	iperidine /l	N.D.
	3904 isophorone 1,000. ug/	/ 1	N.D.
	3911 2-nitropher 1,000. ug/	nc1	N.D.
13		volatiles con't	Batch: 98282WAG026
•	3890 2.4-dimethy	/lphenol	N.D.
	1.000. ug/ 3866_bis(2-chlor	oethoxy)methane	
	1,000. ug/ 1307 0,0,0-triet	hylphosphorothioat	N.D. e
	1,000. ug/ 3886 2,4-dichlor	' 1	N.D.
	1,000. ug/	′ 1	N.D.
	3921 1,2,4-trich 1,000. ug/	' 1	N.D.
	3906 naphthalene 1,000. ug/	′1	N.D.
	1273 2,6-dichlor 1,000. ug/	rophenol /l	N.D.
	3871 4-chloroan 1,000. ug/	iline	N.D.
	1281 hexachloror	propene	N.D.
	3900 hexachlorot	outadiene	N.D.
	-3.		

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LCS DUP

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LCS RPD



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LCS LIMITS

HIGH

LOW

LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

RPD

DUP

RPD

	SAMPLE LOQ	SAMPLE UNITS	BLANK	
20,0	130.	enylenediamine ug/l sodi-n-butylamine	N.D.	
1,0	00.	ug/1	N.D.	
1,0	00.	o-3·πethylphenol ug/l	N.D.	
1.0	safrole	ug/l	N.D.	
1.0	- 2-meτην 00.	lnaphthalene ug/l -tetrachlorobenzene	N.D.	
1.0	00.	ua/l	N.D.	
3901	hexachl	orocyclopentadiene ug/l	N.D.	
3923 1.0	2,4,6-ti 00.	richlorophenol ug/l	N.D.	
1,0	00.	rich]orophenol ug/	N.D.	
1.0	isosafro 00	ua/`	N.D.	
1,0	00.	onaphthalene ug/:	N.D.	
3907 1,0	2-nitro 00.	aniline ug/l hthoquinone	N.D.	
10.0	00,	ug/1	N.D.	
1.0	00.	lphthalate ug/l	N.D.	
1278 1.0	3-dini 00.	itropenzene ud/l	N.D.	
3895	2.6-din	itrotoluene ug/l		
.311 A _l	op. IX Ser	mi-volatiles con't	Batch: 98282WAG0	26
1.00	acenaphi 00.	ua/l	N.D.	
3903 1,00	3-nitroa 00.	aniline ug/l	N.D.	
3857	acenapht	thene	N.D.	
3893 5.00	2,4-c∷ni 00.	ug/l itrcphenol ug/l	N.D.	
3912	4-nitrop	pherol	N.D.	
3879	dibenzoi 00.	furan	N.D.	
1297	pentach1 00.	lorobenzene	N.D.	
1,00	, · · ·	ug/ i	M.U.	

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LCS RPD



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LCS LIMITS

HIGH

LOW

LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

MS

MSD

DUP

RPD

MS RPD

LCS

SAMPLE LOQ	SAMPLE UNITS	BLANK
3894 2,4-dinitr]/ 1	N.D.
1287 1-naphthy 1,000. ug]/]	N.D.
1288 2-naphtnyl 1,000. ug	<u>1</u> /1	N.D.
0438 2,3,4,6 Te 1,000 us	_[/]	N.D.
3887 di≘thylpht 1,000. ug	1/ر	N.D.
3875 4-chloropñ 1,000. ug	enylphenylether //l	N.D.
3898 fluorere 1,000. ug	1/ 1	N.D.
1296 5-nitro-o- 1,000. ug	₁ /1	N.D.
3909 4-nitroani 1.000. ud	lire /l	N.D.
3892 4,5-dinitr 2,500. ug	o-2-methylphenol	N.D.
3914 N-nitrosoo 1,000. ug	liphenylamine	N.D.
1305 tetraethyl 1,000. ug	dithiopyrophosphate	e N.D.
1308 1,3,5-trin 2,000. ug	itrobenzene	N.D.
1299 phenacetin 1,000. ug		N.D.
3869 4-promophe 1,000 ug	nylphenylether	N.D.
1313 diallate (1,000. ug	trans/cis)	N.D.
1274 dimethoate		N.D.
2,000. ug 3899 hexachloro	ber zene	
1,000. ug		N.D.
	volatiles con't	Batch: 98282WAG026
1269 4-aminobip 1,000. ug	/1	N.D.
3916 pentachlor 2,500. ug	ophenol /l	N.D.
1302 pronamide 1,000. ug		N.D.
1298 pentachlor 1,000. ug	onitrobenzene	N.D.
3917 phenanthre 1,000. ug	ne	N.D.
1,000. ug	<i>,</i> ,	

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LCS LIMITS LOW HIGH

LII Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

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Sample Loc!	SAMPLE UNITS	BLANK
3859 arithracene 1,000. ug/		N.D.
3880 di-n-butyl; 1,000. ug/	/1	N.D.
1289 4-nitroguir 10,000. ug/	' 1	N.D.
3368 methapyrile		N.D.
1282 isodrin 2,500 ug/		N.D.
3897 fluoranther 1,000. ug/		N.D.
3919 pyrene 1,000 ug/	(1	N.D.
1,000 ug/		N.D.
1272 chlorobenzi	'1	N.D.
2,500. ug/		N.D.
3870 butylbenzyl	ן'	N.D.
1268 2-acetylami 1,000. ug/	'1	N.D.
3885 3,3'-dichlo 1,000. ug/	orobenzidine 1	N.D.
3860 benzo(a)ant 1,000. ug/	1	N.D.
3868 bis(2-ethyl 1,000 ug/		N.D.
3876 chrysene 1,000. ug/	1	N.D.
3896 di-n-octylp 1,000. ug/	T'	N.D.
1,000. ug/		N.D.
3861 benzo(b)flu 1,000. ug/	1	N.D.
3862 benzo(k)flu 1,000. ug/	7	N.D.
3864 benzo(a)pyr 1,000. ug/		N.D.
1284 3-πethy cho 1,000. ug/	lanthrene	N.D.
	3-cd)pyrene	N.D.
3881 dibenz(a,h) 1,000. ug/	arthracene	N.D.
3863 benzo(ghi)p 1,000. ug/	erylene	N.D.
1,000. ug/		

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LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette Brashears & Graham MN

MS

SAMPLE SAMPLE LOQ

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LCS LIMITS LCS LCS DUP RPD LOW HIGH

3370 thionazin

1,000. ug/l

N.D.

Batch: 982670002A

0854 n-hexane

0.050 * by wt.

0445 Solvent Identification

0855 n-heptane 0.050 ൂ by wt.

0856 n-octane

ˈ¯* ɔyˈwt. 0.050

0857 isooctane

≯ by wt. 0.050 0858 benzene

0.050 % by wt.

0859 toluene

0.050 * by wt.

0860 ethyl benzere 0.050

ൂ by wt. 0861 xylenes

0.050 % by wt.

0862 styrene

0.050 * by wt.

1120 chlorobenzere

0.050 % by wt.

0863 methanol

% by wt. 0.050

1118 n-propanol

0.050 * by wt.

0864 ethanol * by wt.

0.050

0865 isopropanol

0.050 % by wt.

0866 n-butanol 0.050 % by wt.

0867 isobutanol

0.050 % by wt.

0868 acetone

0.050 % by wt. 0869 methyl ethyl ketone

0.050 % by wt.

0870 methyl isobityl ketone 0.050 ൂ ∋y wt.

1119 cyclohexanore

0.050 * by wt.

0871 methyl cellcsolve

0.050 % by wt.

0872 ethyl cellosolve

0.050 ൂ ⊃y wt.

Jan agran Japanardaws мемвен ^{дарды}нын обын 90 - 1 2428 Ust rather 44 17605-0 425 าวครอบรวด ที่มีการที่สอบสลา

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LCS LIMITS

LOW HIGH

LI,I Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

SAMPLE.

UNITS

SAMPLE

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Group No. 632339 Leggette,Brashears & Graham MN

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0873 butyl cellosolve 0.050 % by wt. 0874 cellosolve acetate 0.050 % by wt. 0875 ethyl acetate 0.050 * by wt. 0876 propyl acetate 0.050 * by wt. isopropyl acetate 0877 0.050 by wt. n butyl acetate 0.050 * by wt. 1116 et:hyl ether 0.050 * by wt. 0880 carbon tetrachloride ∦ by wt. 0.050 0881 chloroform 0.050 % by wt. 0882 methylene chloride 0.050 % by wt. 0883 1.1-dichloroethane 0.050 🔏 by wt. 0884 1,2-dichloroethane 1,1,1-trichloroethane 0.050 🔏 by wt. 0886 1,1,2-trichloroethane 0.050 ✗ by wt. 0887 trichloroethylene 0.050 % by wt. 0888 tetrachloroethylene 0.050 % by wt. 0889 Freon 113 0.050 % by wt. 1117 pyridine 0.050 % by wt. 0466 Solvent Identification (cont.) Batch: 982670002A 0853 n-pentane 0.050 % by wt. Batch: 982580008B J264 4828 TPH by GC-FID in Water 4829 Gasoline 2,000. mg/1 N.D. 4830 Kerosene 2,000. mg/l 4831 Diesel/#2 Fuel N.D. 125 91 95 75 2,000. N.D. 95 95 1 mg/]



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4 (1941) 1605-2425 (1946) 1750 (1981) 177-656-0781 23°3 24



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LLI Sample No. 3001163 South Sump Grab Water Sample

Chrysler - Dayton Thermal Products

Group No. 632339 Leggette,Brashears & Graham MN

		SURROGATE SUN	MARY		
	TRIAL ID	SURROGATE	RECOVERY *	SURROGAT LOW	TE LIMITS HIGH
0173 PCBs in Water		TCX DCB	353 219	39 22	117 142
1309 App. IX Semivolatiles-Water		Phenol-d6 2-Flphenol 2,4,6-TBP	(5) (5) (5)	7 25 34	74 88 125
1310 App. IX Semi-volatiles con't		Nitrobz-d5 2-Fbiphnyl Tphenyld14	(5) (5) (5)	47 51 37	114 106 119
4828 TPH by GC-FID in Water		Chlorobenz o-Terpheny	(5) (5)	50 75	120 135

⁽⁵⁾ Accurate surrogate recoveries could not be determined due to interferences or dilution necessary for this sample.



Analysis Requesi/ Environmental Services Chain of Custagy

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Aib.11# 808219674954

For Lancaster Laboratories use only

Acct. # 10103 Sample # 300/61 4 4 3

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Client: Payton Thermal Product Project Name/#: 3CHRY4 / DAYTON Project Manager: Ken Voyel Sampler: Ame 3. Olan Do Otto	P.O.#		.	- -	9	ES applicable)		of Containers		/		/ /.	/ ১/				SCR#:	111603	samples squested)
Name of state where samples were collected: OH. 2 Sample Identification	Quote #:	Time Collected	⊕ arab	omposite	ioil	Water rotable	Other	Total # of Con	18		2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/		2/87/20	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Remarks			Temperature of st upon receipt (if re
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Data Package Options (please circle if requested) QC Summary	y∈ uired? Yes	Complete? es No No			hed by	, 					D	ate	Time	Received by:			<u> </u>	Date	Time
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